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HOME OFFICE LOCKDOWN



Virtual offices pose huge data risks. Here's how to minimize them. Page 26

GM Aims for Uniform Global IP Net

SIB pact lets AT&T oversee regional telecom providers

BY PATRICK THIBODEAU
General Motors Corp. last week handed AT&T Inc. a five-year, \$1 billion contract to continue building a global IP network for voice, data and video traffic. In the new deal, AT&T also becomes the übermanager of GM's regional network providers.

Ralph Szyanya, GM's CIO and group vice president, said the IP network is intended to help GM operate as a "real-time global business" whose workers can collaborate using a consistent set of technologies, whether the workers are in Detroit, Shanghai or Zurich.

five-year agreement and expands on it by giving AT&T responsibility for managing GM's relationships with 150 other telecommunications providers around the globe.

AT&T's new management role is part of GM's year-old effort to ensure that all of its IT providers work together as a team and follow a consistent set of service and support practices.

"Information technology providers have to work as one in a corporation," Szegenda said. "They can't work as a bunch of IT companies competing against each other in

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Feds Probe Spending for Virtual Fence

Cost estimates for Boeing-led border security project now as high as \$30B

BY MATT HANNAH

Leading House Democrats and government accountants are scrutinizing The Boeing Co.'s multibillion-dollar contract to design and build a U.S. border security system rich with advanced perimeter protection technology. And they are raising serious concerns about the project's cost and

The U.S. Department of Homeland Security initially said the high-tech fence, called SBInet, could cost as little as \$2 million, but the price could balloon to as much as \$30 billion, according to one congressional source. The fences along the Mexican and Canadian borders will in-

clude all-weather electro-optic gear, infrared cameras, radar and digital communications

The DHS, which will give estimates only for the Mexican border portion of SBI^{net}, said the southern section will cost \$7.6 billion through 2011, according to a report issued earlier this month by the U.S. Government Accountability Office.

Milestones have not been set for the Canadian border, although the DHS told the GAO that the upper limit of funding will provide border security technology for "6,000 miles of secure U.S. border," which includes both *Virtual Fence* zones.

"ing" use of various Web 2.0 technologies, which are becoming increasingly critical to accomplishing missions that require analysts to share intelligence, said Lewis Shepherd, chief of the DIA's requirements and research group at the Pentagon.

The tools are helping the
Web 2.0, page 44

INSIDE

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funds in writing
machines area.

Military Intelligence Goes Web 2.0

DOD agency using wikis, AJAX, blogs

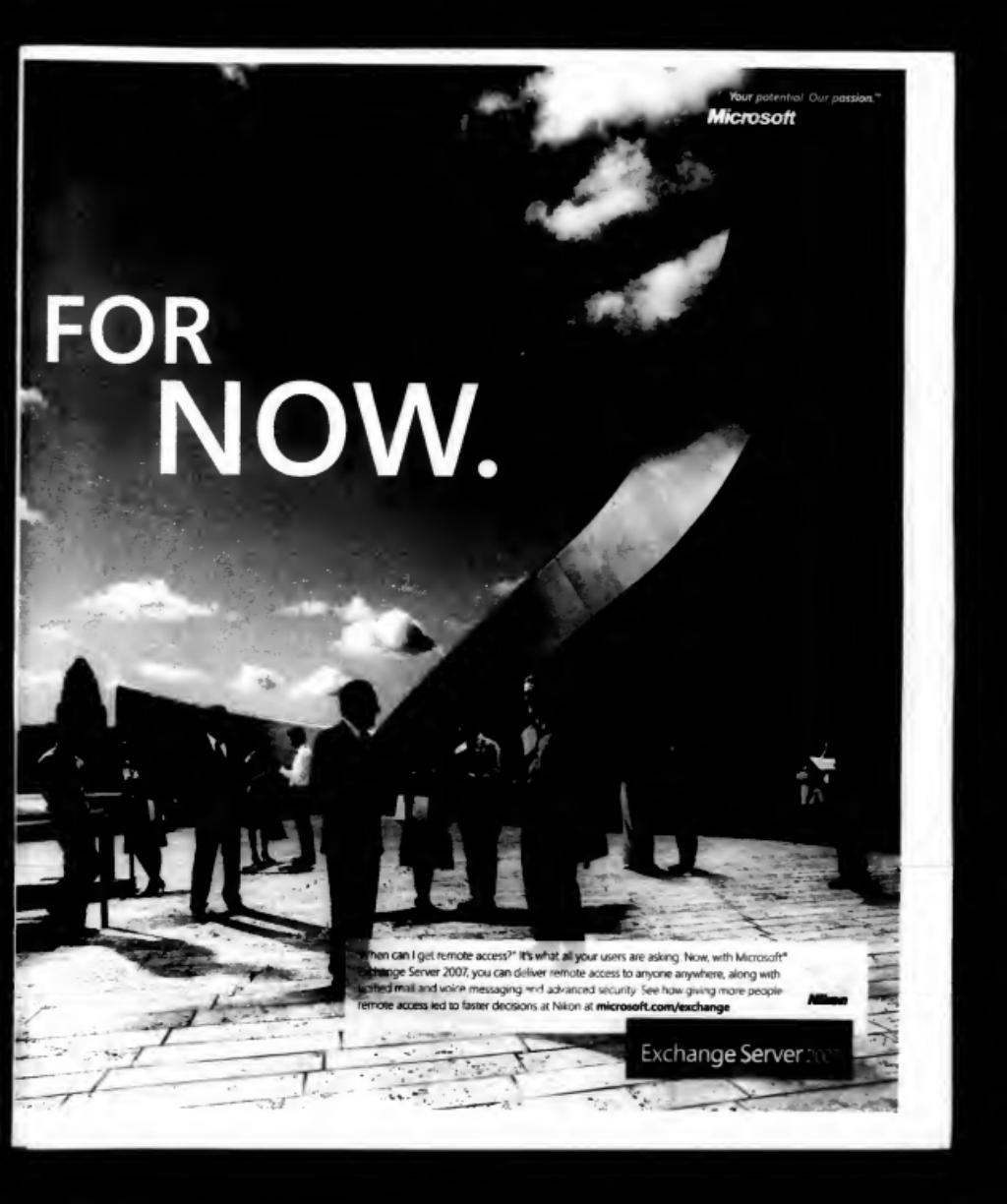
WEATHER WATCHER

The U.S. Department of Defense's lead intelligence agency is using wikis, blogs, RSS feeds and enterprise "mashups" to help its analysts collaborate better when sifting through data used to support military operations.

The Defense Intelligence Agency is seeing "mushroom-

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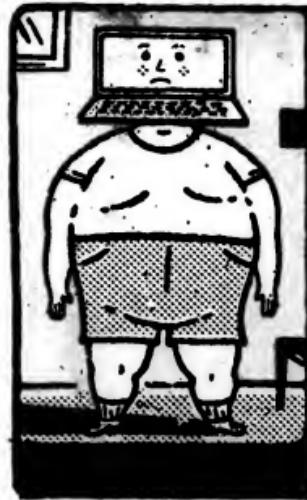
22 **At the prompting of doctors,** the University of California, San Francisco, Medical Center has launched an effort to test the viability of dual-mode telephones.

44 **Sen. Diane Feinstein asks the GAO to investigate troubled e-voting machines.**

STRATEGIES & TACTICS

Lose Unwanted Gigabytes Overnight!

Data de-duplication technology eliminates redundant versions of files, yielding a dramatic reduction in backup storage needs. Analysts say that putting your information on this diet can shrink 20TB of data into 1TB.



26 **New Office Lockdown:** Virtual offices put corporate data at risk. There are tools to mitigate the threat, but most companies still lack policies. Here are some steps you can take to improve security today.

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36 **Security Manager's Journal: Getting the NAC of Things at RSA.** When dealing with a problem like access control, Mathias Thurau finds that the RSA conference is a good place to look for answers.



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24 Virginia Robbins offers advice about handling people she politely refers to as PITAs — those co-workers who make your 9-to-5 life more difficult.

25 Ben Rothke argues that the most serious threat to corporate networks is the one posed by insiders.

Robert L. Mitchell contends that liquid cooling is coming sooner than you might think. But standards have to come later.

Frankly Speaking

Frank Hayes is excited by the data derived from two studies on disk drive failure. He says the information will be a boon to data center managers.



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KNOWLEDGE CENTERS

Longhorn Server Revealed

SERVERS AND DATA CENTER: Columnist Jonathan Hassell discusses five IIS enhancements you should know about, including modularity and the ability to configure IIS 7 from a text file.

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But It's Good for You . . .

SECURITY: Encryption is like flossing — everyone knows they should, but a lot of folks dread it or don't do it well. Anton Chuvakin points out five potential pitfalls in efforts to secure your data. © www.computerworld.com/security

Build Your Own Yahoo Pipe

NETWORKING & INTERNET: Yahoo's new RSS mashup application is so easy, even an editor can do it. © www.computerworld.com/networking

A Good Place to Start in IT

CAREERS: Robert Half Technology's Katherine Spencer Lee offers reasons why starting one's IT career on the help desk is a good idea.

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Fried up about IT? It's

TOP-READ STORIES

First look: A Wireless Wow

WIRELESS: With its new Airport Extreme base station, Apple moves ahead into the still uncharted world of 802.11n wireless networking.

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Buying a New PC? 'Windows Vista Capable' Barely Hits the Mark

PERSONAL SYSTEMS: 512MB of RAM may be the suggested minimum, but think Ge if you want decent performance. © www.computerworld.com/hardware

Past, Wanna Save \$140 on Vista?

PERSONAL SYSTEMS: Microsoft confirmed the existence of a legal loophole allowing the installation of upgrade copies on PCs that shouldn't qualify.

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Microsoft Releases List of Verified Vista Applications

SOFTWARE: Some notable software packages are conspicuously missing.

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Cisco Router Vulnerability

SECURITY: Cisco Systems says 77 of its routers are vulnerable to a hack tactic known as "drive-by pharming," and the company urges users to change their routers' default passwords.

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BLOG SPOTLIGHT

What Would a Subnotebook Mac Look Like?

Rumor sites report that Apple may be adding a subnotebook to its portable lineup. Apple's past ultraportable products might offer some clues as to what that machine could be.

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AT DEADLINE

Microsoft Fined \$1.5B in Patent Suit

A jury in federal court in San Diego has ordered that Microsoft Corp. pay \$1.5 billion in damages to Alcatel-Lucent SA for infringing on patents for MP3 encoding and decoding technology. Alcatel-Lucent, then called Lucent Technologies, first filed suit in 2003 against Microsoft, customers Dell Inc. and Gateway Inc., for infringing on 15 patented technologies it said were being used in the Windows client operating system. Microsoft said it will appeal the decision.

Veritas to Pay \$30M For SEC Charges

Veritas Software Corp. has agreed to pay \$30 million to settle charges by the Securities and Exchange Commission that it engaged in fraudulent accounting practices and aided Time Warner Inc.'s AOL LLC unit in committing fraud. Veritas, acquired by Symantec Corp. in 2005, agreed to pay the fine "without admitting or denying the allegations," according to an SEC filing.

Many Apps Not on Microsoft Vista List

Microsoft has released a list of 800 applications that have been officially verified to run bug-free on Windows Vista. The list compiled by the vendor does not include Adobe Systems Inc.'s line of graphics and multimedia software, Symantec security products, the Mozilla Foundation's open-source Firefox Web browser and the OpenOffice.org alternative to Microsoft Office.

Flaw Found in Google Desktop

Security researchers have disclosed a flaw in Google Inc.'s desktop software that could be used to wreak havoc on a victim's computer. Google has issued a patch for the bug, which was made public last week by Watchfire Corp. Watchfire first notified Google of the problem on Jan. 4, and a fix was produced on Feb. 1.

TJX Data Breach Worse Than Initially Reported

Occurred earlier, reached further than first thought

BY JAIRAMAR VILAYAN

THE MASSIVE data breach disclosed last month by the TJX Companies Inc. was far worse than first reported, the company said last week. An ongoing internal investigation into the breach has shown that intruders gained access to TJX's systems in July 2005, almost a full year earlier than first thought.

The investigation has also found that card transaction data from TJX-owned stores in the U.K. and Ireland were affected by the intrusion, the company acknowledged. Previously, TJX had said only that it was "concerned" that the breach may have extended to those countries. "We are dedicating substantial

resources to investigating and evaluating the intrusion," TJX CEO Carol Meyrowitz said in a statement.

More than 50 experts from IBM and General Dynamics Corp., hired by TJX to shore up security in the wake of the breach, are investigating the incident, Meyrowitz said.

"**T**JX is just the tip of the iceberg.... It's going to get a lot uglier before it gets any better."

ALEX BAKMAN

TJX, owner of retail chains TJ Maxx, Marshalls and Bob's Stores, last month revealed that someone had illegally accessed a payment system and made off with card data belonging to customers in the U.S., Canada and Puerto Rico and possibly in the U.K. and Ireland. At the time, the company said the breach had occurred in May 2006.

TJX hasn't disclosed how many shoppers may have been affected by the breach. Some analysts believe the number could be in the millions.

Avihai Litani, an analyst at Gartner Inc., said the latest update by TJX could mean that officials are getting closer to finding the perpetrators. "I think they have pinpointed [the] intruder to a large degree and may have found files indicating that 2005 [card] data was stolen," she said.

TJX's latest disclosure is not all that surprising and points to a broad lack of internal data controls at many large companies, security analysts say.

"When it comes right down to it, very few companies have effective controls to monitor internal systems closely and follow the movement of

data" on their networks, said Alex Bakman, CEO of Ecora Software Corps., a Portsmouth, N.H.-based maker of compliance software. Therefore, such breaches can go unnoticed for a long time, he said.

"The underlying problem is that companies are treating security as a 'nice to have' as opposed to a 'must have,'" Bakman said.

"TJX is just the tip of the iceberg, I think we are going to see many more" such disclosures, he added. "It's going to take a lot longer before it gets any better."

Joel Rosen, CEO of security vendor Tigon Systems Inc. in Maynard, Mass., said, "Many companies that relied on traditional security are just coming to terms with the fact that beefing up existing systems is not the answer."

The fallout from the breach has been widespread as U.S. and Canadian banks and credit unions have been forced to block and reissue thousands of cards. The New Hampshire Bankers Association has estimated that 20% to 30% of New England residents may have been affected by the breach. ■

JetBlue Cites Overwhelmed IT Systems in Meltdown

BY LINDA ROSENBERG

Jetblue Airways Corp. last week acknowledged that faulty IT processes contributed to its decision to cancel more than 1,000 flights in the days following an ice storm earlier this month.

"For one thing, we didn't have enough of our home-office employees or crew members trained on our reservation system," said Eric Brinker, a spokesman for the Forest Hills, New York-based airline.

"So while we were dispatching people to the airports to help, which was great, they weren't trained to actually use the computer system," he said.

"So we're going through a process now where we're actively training those crew members."

The company's reservation system is hosted by Navitaire

Inc., a Minneapolis-based provider of applications for airlines; said Jetblue CEO Duffy Mees. The crew-tracking system is from air-travel software company Sabre Holdings Corp. in Southlake, Texas, Mees said.

The airline is a Microsoft Windows-only shop and also runs mySAP ERP software from SAP AG, according to company information.

Brinker noted that in the midst of the crisis, Jetblue's IT department developed a database that quickly allowed the airline's scheduling team to improve its multitasking capabilities.

"They were receiving tons of phone calls from our crew members, and we created a database to enter the whereabouts of our crew members," he

said. "That information would sync up with the information about the crew members that was in the main system."

"Now," Brinker said, "during a weather situation, our flight crews and flight hands can call us and give us the location of where they are, and we can start to rebuild the airline immediately using this tool."

The system, which was de-

veloped in 24 hours and implemented in the aftermath of the Feb. 14 storm, is now running company-wide, Brinker said. "It's a real behind-the-scenes improvement for both our crew members and customers," he noted.

Brinker said that Jetblue is also updating its IT systems to allow for improved communication with customers. For example, the company is working to push out automated flight alerts to customers via e-mail and mobile devices.

As a result of its problems following the storm, the airline last week issued a "customer bill of rights" citing steps that it would take in the event of future problems. ■





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After the war, the U.S. government established the National Defense Research Commission (NDRC) to manage the production of war materials. The NDRC was responsible for the production of aircraft, ships, tanks, and other military equipment. The agency also oversaw the development of new technologies, such as atomic bombs and jet engines. The NDRC played a key role in the development of the atomic bomb, which was developed by the United States and the United Kingdom during the war.

New Intel Unit to Focus On Growing HPC Market

High-performance computing is a key market segment, executive says

BY PATRICK THIBODEAU

Intel Corp. late last year created a separate business unit to oversee the high-performance computing efforts under way at the company. The move comes as Framingham, Mass.-based IDC released research showing that the HPC industry, which is expanding at 9% annually, may be the fastest-growing computing segment. IDC expects HPC business to reach \$4.3 billion worldwide by 2010. The new Intel unit's general manager, Richard Brattin, discussed the HPC market and some of the company's plans for it in an interview with Computerworld last week.

Why did Intel appoint a dedicated general manager for its HPC area?

We primarily did this to increase the focus on what we see as an important and growing market segment.

How is this market getting broader? At one point, high-performance computing was the preserve of research as are and very high-end engineering organizations. What you are seeing, increasingly, is commercial application of this technology to help companies bring new products to market, primarily through areas

of simulation. [Companies] like BMW and Boeing will do more computer-based simulation rather than continue to use wind tunnels, which take longer and are more expensive. In the commercial world, it's things like, "How do I mix a liquid?" How do I model how the chemicals are mixed in there? How do I make sure that a bottle will withstand any shock it may receive as it goes down the production line?"

What are some of the HPC projects under way at Intel today?

Some examples of what we're doing are high-density designs that have twice as many processors in the same space in a single rack. We

worked with third-party companies to come up with a design that has two CPUs on a board that's half the width of a normal board and put two of them side-by-side in a 1U design.

A different example is the software. In some clusters, it is necessary to reboot the node to either re-provision it in a different way or to clean it completely before you use it for some other purpose. We've come out with a technology that allows you to boot the platform much more quickly to a predefined state. That can actually get your boot time down by an order of magnitude. That product we have coming along at the end of the quarter.

In general, are Intel's HPC development efforts a testbed for what will appear in your business products? Absolutely. That's one of the motivations for increasing the integration of our HPC activities across Intel. For

example, the terascale device [an 80-core chip that performs more than a trillion floating-point operations per second] is a technology development vehicle, but it gives you an idea of the kinds of things that we're looking at for the medium term — four to five years — at the high end, but [we're also looking long term down on the volume side of the product range].

How do user companies view their HPC operations — as something run by research divisions, or managed by IT? I think historically, a lot of the high-performance compute resources in the company have tended to be self-sufficient. But as you look at the broadening use of HPC, where companies that may not historically have had that capability in-house, it's sometimes more likely to come up within the existing IT environment. And that's why you see some increased interest in using Windows as opposed to traditional Linux in that space. ▶



Updated Google Apps Pose Threat to Microsoft Office

Features pique interest of IT execs

BY JUAN CARLOS PEREZ

Google Inc. last week unveiled an upgraded version of Google Apps, a hosted suite of business applications that some analysts said could soon become a serious competitor to Microsoft Office.

Priced at \$50 per user per year, the new Google Apps Premier Edition is the third and most sophisticated version of the suite, which was first launched in August with two free editions.

The latest version offers guaranteed uptime, IT management tools, technical support, increased e-mail storage and integration with the Google Docs & Spreadsheets word processing and spreadsheet application, the company said.

Corporate users had mixed reactions to the offering.

"I played with Google Spreadsheets once not long ago," said Jim Prevo, CIO at Waterbury, Vt.-based Green

Mountain Coffee Roasters Inc. "This may have promise down the road, but I'm not excited about it in any way at this time."

Corporate desktops serve many purposes, said Prevo, adding that he doesn't think they will be quickly displaced by Web-based office applications. "Google has a long way to go," he said. "I suspect they will be most useful for individuals who want to share documents with family members and friends. For that, I think they have an interesting prod-

uct at this point."

Forrester Research Inc. isn't telling corporations to drop Office, but it is recommending that CIOs evaluate Google Apps, in large measure because of the price tag of Office. Forrester analyst Erica Driver described Google Apps as a low-cost alternative to core Office applications.

The hosted software could replace Office in the long run, as CIOs get more comfortable with software as a service, she said. "Microsoft has a chance to respond, but this changes the game," Driver said.

The Procter & Gamble Co.'s global business services unit has been testing the new version of Google Apps but hasn't decided whether to use it. "We are still looking to see if there are applications for the product within the company," said a spokeswoman for the unit.

Camden Daily, technology director at Prudential Preferred Properties Inc., said his company is feeling a price

sting with Microsoft Office. The real estate company pays between \$350 and \$400 per license, he noted. "We have instances in which the Office license was more expensive than the PC [it's on]," Daily said.

Google Apps found its way into Prudential, which has 450 employees, as an alternative to a corporate e-mail service that constantly malfunctioned. Prudential has been using the free Standard version but is willing to pay for the Gmail service. "Everything on top of that is just a bonus," he said.

Kirk Gregerson, director of Microsoft's Office team, pointed out that Office customers have had less-expensive alternatives, even free ones, for years but have still chosen Office for factors beyond cost.

Google believes its Premier Edition can be a good complement to Office, and it sees a big opportunity in organizations that haven't been able to justify the cost of offering e-mail to some employees, particularly

[Google's business apps] may have promise down the road, but I'm not excited about it in any way at this time

JIM PREVO

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in retail and manufacturing, said Dave Girouard, vice president and general manager of Google's enterprise unit.

The company also plans to create an ecosystem of partners and developers around Google Apps, he said. ▶

Peres is a reporter for the IDG News Service. Computerworld's Linda Rosenzweig contributed to this story.

BRIEFS

SanDisk Plans to Cut Workforce, Exec Pay

SanDisk Corp. said it must cut its workforce by 10%, or 250 jobs, because NAND flash memory component prices have fallen 50% in the past two months. The company said the layoffs will begin in early March. It also plans to cut the pay of top executives by up to 15% and freeze salaries for other employees.

SP2 for SQL Server 2005 Is Available

Microsoft Corp. has released Service Pack 2 for SQL Server 2005. The company also said it will allow unlimited virtual instances of the SQL Server SP2 database to run on servers that are fully licensed for SQL Server 2005 Enterprise Edition. The new SQL Server 2005 SP2 will be the only release of the database supported on the Windows Vista operating system and upcoming Longhorn server software, which is due for a final release by the end of 2007.

HIP Sales, Profits Top Analyst Expectations

Hewlett-Packard Co. topped Wall Street's expectations as its revenue rose 11% and profits gained 26% in the first quarter of its 2007 fiscal year, which ended Jan. 31.

HPE BY THE NUMBERS (FY)	
Q1 '07	\$1.5B
Q1 '06	\$1.2B

Adware Firm, FTC Settle in \$1.5M Deal

Adware distributor Direct Revenue LLC agreed to pay \$1.5 million to settle charges filed by the Federal Trade Commission. The FTC had charged that the company used "unfair and deceptive methods to download adware onto consumers' computers and then extract them from removing it." In a similar agreement in November, Zango Inc. - formerly 180Solutions - agreed to pay \$3 million to the FTC.

C ON THE MARK



Skip Patch Tuesday Frenzy . . .

...with an appliance designed to ensure that network traffic is valid. Gregory Ness, vice president of corporate marketing at Blue Lane Technologies Inc. in Cupertino, Calif., says that since Microsoft Corp. introduced Patch Tuesday into the IT lexicon, systems administrators have dreaded that day even more than Mondays. Add regular patch dates from Red Hat, Oracle, Sun Microsystems and others — not to mention out-of-turn patches for zero-day exploits — and IT admins either don't patch or, having no time to test patches for production systems, apply the patches and cross their fingers. "There's a feeling that the other guy is going to get attacked first," Ness says. Allwyn Sequeira, vice president of engineering and operations at Blue Lane, says the PatchPoint appliance looks at network traffic to determine whether it is in violation of the latest patches. If incoming traffic, say, threatens to cause a buffer overflow, the device addresses that problem before sending the data through, nullifying the exploit. "We don't care about the payload," Sequeira says. He adds that PatchPoint's only task is to keep all traffic compliant with patches, which are updated



The PatchPoint device "patches" traffic and not systems.

daily. By Q3, Blue Lane will add support for MySQL. Pricing for the appliance starts at \$10,000.

Orchestrate SOA app tests . . .

...so your programs play well together. Most service-oriented architecture applications run through scripted tests that have been hand-coded, claims Ken Gardner, founder of SOASTA Inc. in Mountain View, Calif. Not only is that testing method time-consuming, but it's also potentially error-prone, he says. Automated testing tools are better, but most today are designed for a different

HOT TECHNOLOGY TRENDS, NEW PRODUCT NEWS AND INDUSTRY BUZZ BY MARK HALL

architecture and a different message-based world needs a special message-based testing tool." And he says he has one in Concerio, which becomes generally available next month. The browser-accessible service uses a visual timeline, similar to those in consumer software such as Garage Band. In Concerio's Composition Editor, developers can drag and drop pre-defined or custom test loads into a timeline to hang away at XML, SOAP, HTTP and all manner of SOA components. You can control the sequence of test parameters and their timing "down to the millisecond," Gardner says. Pricing starts at \$250 per month.

Federated CMBus inches closer . . .

...to standardization. Six major vendors — BMC Software, CA, Fujitsu, Hewlett-Packard, IBM and Microsoft — have agreed in a white paper on the outline of what a federated configuration management database (CMBus) would look like. According to Marv Waschke, senior technology strategist at CA, a CMBus will give providers of management data repositories standard interfaces to register resource information, make changes and handle queries and other tasks. Until now, he says, if you wanted to integrate CMBus-related information between different systems, "it was a one-off job between, say, Tivoli and Patrol, and the work could not be duplicated." The next goal of the CMBus Working Group is to create the specifications for implementing a CMBus. Waschke says to

expect a complete specification by early 2008. He thinks this advance is more than just a footnote in IT history. In fact, Waschke contends, "the CMBus is going to do more to integrate IT management than anything in my career."

Green thinking for data centers . . .

...driven by vendor consortium. Today, The Green Grid, a newly formed consortium, will announce a set of initiatives intended to make data center systems more energy-efficient. The Green Grid includes data center technology partners Advanced Micro Devices, American Power Conversion (APC), Dell, HP, IBM, Intel, Microsoft, Rockwell, Sun Microsystems

45B

IBM has announced that U.S. data centers in 2006, says a study by **Jonathan Kennedy**, a research director at **Lawrence Berkeley National Lab**.

SprayCool, Sun Microsystems and VMware. The group plans to create common definitions and metrics for users and vendors. According to John Tuccillo, director of global data center systems at APC in West Kingston, R.I., and a member of The Green Grid's board of directors, one of the group's thorniest tasks will be defining terms — even basic ones such as efficiency. "What we all thought we knew, it turns out we all had a different spin on," he says. Board member Rick Schucke, a senior technical staffer at Dell, says The Green Grid intends to spur energy-efficiency in everything from microprocessors and servers to cooling systems and systems management. Initially, The Green Grid will offer users a package of best practices, such as ways to find "stranded capacity" within your operations. Sign up at www.thegreengrid.org.



Ken Gardner
founder of SOASTA Inc.

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BRIEFS

Blade.org Start-ups Get \$1B Investment

Venture capitalists have invested \$1 billion in start-up companies belonging to Blade.org, a year-old organization formed to push blade technology. Wadens International, for example, has invested \$100 million in start-ups and early-stage companies that are members of the organization. Blade.org includes 100 mostly U.S. companies that sell processors, software, networking equipment and other technology for blade servers. The group is backed by IBM.

SAP Buys Business Software Maker

SAP AG has agreed to acquire privately held Pilot Software Inc., a maker of strategy management software in Mountain View, Calif. Terms of the deal were not disclosed. SAP said it plans to integrate Pilot's core product, a business analysis application called PilotWorks, into its suite of products that run on the SAP NetWeaver platform.

Wind River Buys RTLinux Patents

Wind River Systems Inc., a maker of software development tools for embedded systems, has agreed to acquire the patents, copyrights and trademarks for RTLinux, real-time Linux technology developed by Finite State Machine Labs Inc. Wind River also acquired the rights to future runtime revenue streams from RTLinux customers running embedded applications. Terms of the deal were not disclosed.

ACM Honors IBM Computer Scientist

The Association for Computing Machinery has named Frances Allen, a computer scientist at IBM, as winner of the A.M. Turing Award for her work in automatic program parallelization, which allows programs to use multiple processors to improve speed. The ACM said the work of Allen "contributed to advances in the use of high-performance computers."

Wal-Mart Shifts RFID Plans

Emphasis now on stores rather than distribution hubs

BY MARC L. SONGINI

THOUGH WAL-MART Stores Inc. expects the number of its stores using radio frequency identification systems to reach 1,000 in April, the retailer has come under fire from some analysts and users for failing to meet its plan for installing the technology in its distribution centers.

A spokesman last week acknowledged that the company missed its goal of installing RFID technology in 12 of its 137 distribution centers by the end of 2006. Simon Langford, director of RFID and transportation systems at Wal-Mart, said the missed goal reflects a change in course by the company to instead concentrate on RFID-enabling its retail stores.

Along with the U.S. Department of Defense, Wal-Mart is widely seen as one of the

world's top drivers of RFID technology. Wal-Mart began its RFID journey early in this decade, when it mandated that its 100 top suppliers start tagging all cases and pallets carrying merchandise by January 2005. Wal-Mart officials said 600 of its suppliers are currently RFID-enabled.

Despite the missed deadline for installing the technology in the distribution centers, Langford insisted that Wal-Mart's overall RFID effort is on track and has been successful so far. "We're accelerating [RFID adoption] and at a greater pace than last year," he said.

Cost vs. Benefits

However, Michael Liard, an analyst at Oyster Bay, N.Y.-based ABI Research, said the shift in strategy could slow Wal-Mart's effort to boost the visibility of its supply chain.

Having RFID technology in the distribution centers would let the company mark merchandise as it arrives from its suppliers, Liard said.

But when they're sitting in



A Wal-Mart spokesman said the chain's RFID effort has been successful

the non-RFID-enabled distribution centers, the items are invisible, so Wal-Mart wouldn't get the full benefits of RFID technology in its supply chain, he added.

"For us, it presents a problem," Liard said.

Langford, however, argued that first installing RFID technology in its stores allows the retailer to better collaborate with suppliers that need to monitor the flow of inventory and respond to problems or spikes in demand.

Also, Langford said, store

personnel can better use the technology to keep the shelves full of merchandise and reduce the number of products out of stock at each store. Wal-Mart expects to have rolled out RFID to 1,000 stores by the end of April, up from 100 in January 2005.

"We're focused on the store level," said Langford. "If we focused internally [at the distribution centers], it would provide no value to our suppliers. When we set out on this journey, we really focused on the collaborative benefits; we wanted what was going to drive sales for our suppliers and to get product on the shelf, where it needs to be for our customers to buy."

Langford credited the use of RFID technology with cutting the incidence of out-of-stock products by 30% while improving the efficiency of moving products from backrooms to store shelves by 60%.

"RFID in our stores is going to drive the initial value," he said. "We see distribution centers as coming upstream a bit later."

Langford acknowledged that the company's 100 suppliers, which went live with the technology during 2005, faced some challenges while learning how to use it. Smaller suppliers that implemented the technology later on benefited from lessons learned by the earlier adopters, he said.

— MARC L. SONGINI

Procter & Gamble: Wal-Mart RFID Effort Effective

ONE OF WAL-MART'S top providers of consumer goods found success by following the RFID requirements of the retailer.

The Procter & Gamble Co. is Cincinnati, one of the first 100 suppliers to comply with Wal-Mart's requirements to tag its products with RFID chips, has improved the accuracy of its deliveries to the retailer, particularly during time-sensitive promotions, according to Paul Fox, a spokesman for P&G Global Operations.

"Ensuring that the right product is at the right place at the right time is priceless," he said.

In addition, Fox said, "we've seen significant benefits within our own four walls. It's helping streamline processes and making them more efficient. We know what we're about to ship, and there are no errors or no picking the wrong case and no miscounting."

RFID technology has offered significant improvements over bar-code systems, Fox said. For example, he noted that workers can't scan the same RFID tag twice because each one has a unique identifier. Bar-code technology lacks those capabilities, he noted. RFID automation has also allowed P&G to speed the process of moving products to a distribution center. It took 20 seconds to manually read bar code data on a pallet versus five seconds to read the RFID technology, he said.

The cost of each tag is less than 10 cents, making the technology economically viable, he said. RFID tags cost \$2 each in 1999, Fox noted.

He said P&G's overall investment in RFID technology, which he would only say was "multiple millions of dollars," has been recovered. "Fundamentally, it's been a fruitful collaboration between ourselves and

Wal-Mart," Fox said.

Some analysts remain unconvinced that the Wal-Mart RFID program will prove beneficial to all suppliers. Michael Liard, an analyst at ABI Research, said that more data is needed to determine whether RFID technology is significantly more cost-effective than bar-code systems.

Simon Langford, director of RFID and transportation systems at Wal-Mart, said the second generation of RFID technology has improved performance and accuracy for the retailer.

Langford acknowledged that the company's 100 suppliers, which went live with the technology during 2005, faced some challenges while learning how to use it. Smaller suppliers that implemented the technology later on benefited from lessons learned by the earlier adopters, he said.

Nevertheless, he said, "we needed to remain focused on the stores and store associates and help them move freight to the shelf." ■

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Continued from page 1

Global IP Net

side your own company."

GM began insisting that IT vendors agree to follow standard IT processes a year ago, when the automaker started awarding \$15 billion in IT outsourcing contracts to Electronic Data Systems Corp., Hewlett-Packard Co., IBM, Wipro Ltd. and others.

Paul Roehrig, an analyst at Forrester Research Inc., said GM's approach to outsourcing is smart because it "streamlines the management of all the other governance contracts." He said

the strategy has been used by other large organizations that have enough buying clout to insist on process standards, such as NASA.

The approach isn't without risks, however, especially if a conflict of interest develops when a vendor like AT&T is managing a competitor, Roehrig said.

AT&T currently provides GM with a global virtual private network and is building an IP network based on Multiprotocol Label Switching technology, which enables network traffic to be managed by priority.

Szygenda said GM's decision to

build and even conduct oversight of the project.

"There seems to be no task too important to be outsourced to private contractors," Waxman said. More than half of the 98 staff members hired by the DHS to oversee the new SBInet contract are private contractors, he said, and some of them work for companies that are business partners of Boeing, the company the staff members are overseeing.

The GAO said the DHS needs to tighten oversight and accountability of SBInet with "explicit and measurable commitments" for costs and scheduling.

The GAO also said the actual SBInet contract should include quantifiable limits

go with MPLS technology was a "good bet" for the company when it was made about four years ago. "Now the next five years is really taking it to a totally different level," he said, noting that new initiatives will involve building out the capabilities of the MPLS network, integrating voice, data and video, and managing it as one system.

Work on the integrated IP network is under way, said Ron Spears, executive vice president of AT&T Global Business Sales, adding that it will take about 18 months to reach the point where GM is "running effectively a complete IP infrastructure environment on a global basis."

The goal is to give GM workers everywhere a consistent technology experience. "At its simplest level, there will be a voice-mail platform that will look the same to every

Renews return popular
80% of outsourcing contracts
are renewed with the incum-
bent provider

Lots of multinational organiza-
tions tried to use big service
groups with a similar global
presence

Network outsourcing is the
fastest growing part of the
IT infrastructure outsourcing
market

Brick-and-mortar firms turn to net-
work outsourcing more often as
their reluctance to manage
the complexity of networking
technologies

SOURCE: KPMG IN U.S.; 2006 MNP RANKINGS

General Motors employee
around the world" — and that
isn't a trivial goal, Spears said.

Historically, "it's been a

hodgepodge of systems mostly
built by the regional entities,
and that's true in most enter-
prises today," he added.

Szygenda said GM engi-
neers and support staffers
work as teams, so the company
can't have separate tele-
communications and management
systems supporting them.

"That doesn't work when
you are running a real-time
global company," he said. "You
don't want to have any differ-
ences."

"The real end goal is that
every employee has the same
type of capabilities no matter
where they are in the world,"
Szygenda said. "And in fact,
when they wake up, they don't
need to know where they are
in the world. It just works."

GM has manufacturing op-
erations in 33 countries, and
its vehicles are sold in 192
countries, according to the
company's Web site. *

Continued from page 1

Virtual Fence

the northern and southern
borders.

In recent hearings, two
congressional Democratic
leaders have questioned the
way the Boeing contract is
managed. One hearing was
held two weeks ago before the
House Homeland Security
Committee.

Rep. Bennie Thompson (D-Miss.), chairman of the House
homeland security panel, took
note of the 65-page GAO re-
port questioning the management
of SBInet. "After reading
the GAO assessment of SBInet,
it seems that the department's
scattershot approach of issuing
different, interdependent
task orders simultaneously
leaves the program vulnerable
to collapsing on itself, like a
house of cards," he said.

In a Feb. 8 hearing, Rep.
Henry Waxman (D-Calif.),
chairman of the House Over-
sight and Government Reform
Committee, warned that SBInet
could be subject to waste
and abuse, given how the
DHS is relying on Boeing and
private contractors to design,

beyond the unclear statement
about funding "6,000 miles of
secure U.S. border."

Waxman put the Boeing
contract's value at \$30 billion
in a statement issued at the
Feb. 8 hearing.

DHS Defends Stance

Officials from Boeing and the
DHS testified before the two
committees and have partly
addressed the concerns raised
by the congressional leaders
and the GAO.

Regarding the ultimate
costs, the DHS repeated its
"0,000 miles of secure U.S.
border" limit up to the
GAO, and a DHS spokesman
reiterated that language in an
interview last week.

A DHS spokesman said the
department has already taken steps to
validate the SBInet contract indepen-
dently. Its chief procurement office certi-
fied last November that Boeing had es-
tablished procedures to prevent conflicts
of interest between the company and
subcontractors, according to the DHS.



Boeing will install technology such as cameras and radar at U.S. borders.

As for Thompson's criticism
about task orders being issued
simultaneously, Kia Evans, a
spokeswoman for U.S. Cus-
toms and Border Protection,
stated that the DHS is pro-
ceeding "with a sense of ur-
gency on this critical national
issue" of border security while
remaining sensitive to House
concerns.

Boeing's vice president and
program manager for SBInet,
Jerry McElwee, updated Wax-
man's committee on Feb. 8,
stressing that the government,
not Boeing, will set require-
ments for the entire program.
"We do collaborate exten-
sively with the government,"

but the final decision is made
by the government," he said.

Project 2B, a tank order for
a 28-mile stretch of border
near Sasabe, Ariz., has started,
McElwee testified. The order
calls for equipping a mobile
tower with new technology by
mid-June, he said. The DHS
has put the cost of Project 2B
at \$20 million.

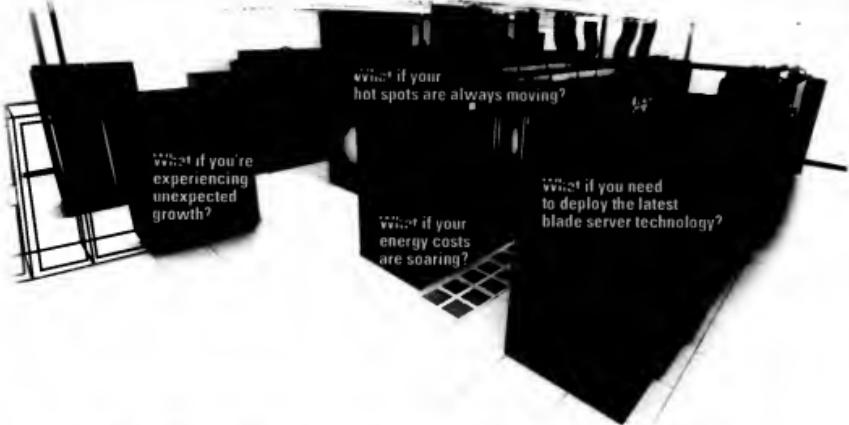
McElwee said Boeing is
trying to address a variety of
terrains and threats, using a
"tool kit" approach with dif-
ferent combinations of sensors,
communications systems, IT,
and command and control
capabilities, depending on the
area. *

From the Computerworld Staff
Report to Congress, 100th Congress
Committee on Transportation and
Infrastructure

SECURE BORDER INITIATIVE

SBInet
Expenditure
Plan Needs to Better
Support Oversight and
Accountability

The GAO has called for more
accountability on the U.S. border project.



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The Highly R

VOLUME 1 - ISSUE 2



Windows Server 2003

For all stories go to

WINDOWS SERVER TAKES CHECKERED FLAG OVER LINUX



THE CONTIDIOM, CONTINENTAL AG's storied test track located near Hanover, Germany

Run Faster for The Highly Reliable Ones

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special edition

New System Gives Global Automotive Supplier 99.9% Reliability

By MICHAEL BETTENDORF

HANOVER, Jan. 2007 — "We needed rock-solid reliability, and we weren't getting it from our legacy infrastructure," says Paul Schwefer, CIO at Continental AG, one of the world's largest automotive suppliers with over 85,000 employees worldwide. Inadequate management tools made it difficult for Schwefer's team to keep system uptimes at the high levels expected at Continental AG, so a change in platform was necessary.

Initially, a Linux solution was considered. However, after a thorough evaluation, Schwefer's team determined that Linux could not deliver the reliable, predictable environment Continental AG required. Instead, they chose Microsoft's Windows Server 2003.

With key features of Windows Server 2003 such as group policy management, Schwefer found clear advantages over a Linux-based solution. "Windows Server provides a reliable environment with centralized administration and management," said Schwefer, who believes that superior manageability leads to high reliability. "Duplicating this level of service in a Linux-based environment would have been very difficult and more costly," he says.

The decision has proven successful: Since the implementation, Windows Server 2003 has provided 99.9% reliability in a distributed environment for Continental AG. For the full Continental AG case study, plus other case studies and independent research findings on the reliability of Windows Server versus Linux, visit microsoft.com/gtthefacts.



BREAKING NEWS: Reliability linked to cheerfulness in IT professionals

In a trend with global implications, IT professionals such as Continental AG CIO Paul Schwefer show obvious signs of exuberance (see above) due to high Windows Server reliability.

"Windows Server provides a reliable environment with centralized administration and management. Duplicating this level of service in a Linux-based environment would have been very difficult."

— Paul Schwefer, CIO, Continental AG



GLOBAL

An International
IT News Digest**Russian Educator Won't Face Piracy Charges**

VERECHANINO, RUSSIA

CHARLES HAVE BEEN dropped against a Russian school principal who faced up to five years in prison for software piracy, according to Russia's state news agency.

The case had drawn widespread attention earlier this month after former Soviet President Mikhail Gorbachev wrote Microsoft Chairman Bill Gates asking him to intervene in the matter.

Gorbachev wrote that while Russian law allows for the prosecution of those who unknowingly use pirated software, the case against Alexander Ponosov was unwarranted.

Ponosov, 40, had been charged with violating Russia's copyright law after police seized 12 computers from his school in the western Russian village of Verechanino.

Police charged that the PCs contained more than \$10,000 (U.S.) worth of pirated Microsoft software, but Ponosov maintained his innocence, claiming that he bought the computers with the software preinstalled.

A regional Russian court on Feb. 15 dropped the charges, citing a lack of evidence, according to RIA Novosti, a state news agency. Ponosov had faced a fine of up to 266,000 rubles (\$10,124 U.S.) in addition to a possible prison term.

■ ROBERT McMILLAN AND JEREMY KURN, IDG NEWS SERVICE

Kuwaiti Firm Creates \$10.5B African Fund

KUWAIT CITY

MOBILE TELECOMMUNICATIONS Company Group (MTC) in Kuwait City this month announced plans to create a \$10.5 billion U.S. investment fund to expand its mobile telecommunications operations in Africa.

The company said it will expand its services on that continent through its Celtel International BV unit in Hoofddorp, Netherlands.

Celtel offers mobile phone services in 14 African countries.

The company announced its African investment plan a month after launching an expansion program, code-named Acceleration, Consolidation, Expansion, aimed at tripling the company's worldwide customer base to 70 million subscribers by 2011.

"We have embarked on an issue of becoming a global company, hence we have to take our range by investing in the latest technology," said Al-Barrak, managing director of MTC, said in a statement.

The company plans to begin spending the fund this year in several countries where Celtel has offices, according to Al-Barrak.

■ MICHAEL MALAKAT, IDG NEWS SERVICE

Nokia Plans Shakeup; 700 Workers Affected

ESPOO, FINLAND

NOKIA CORP. this month announced plans to reshuffle 700 employees, citing a need to boost its focus and efficiency. Under the plan, some workers will be assigned to new jobs and others will be laid off.

Arja Suominen, vice president of communications, said she did not know how many employees would be let go.

Those affected include 360 employees in Nokia's enterprise solutions business group, 140 in the software platforms area of its technology platforms unit, 130 in the global IT operations division, and 30 in the customer and market operations group, the company said.

Nokia's enterprise solutions division posted losses in every quarter in fiscal 2006, including an operating loss of \$64 million (\$84 million U.S.) in the fourth quarter, which ended Dec. 31.

"It's very clear we will need to make that business profitable," said Olli-Pekka Kallasvuo, president and CEO of Nokia, during a press conference at the 3GSM World Congress in Barcelona. "We're looking at different options in order to do that."

Nokia said it is also seeking greater efficiency in the research and develop-

ment operations of its technology platforms unit.

■ JEREMY KURN, IDG NEWS SERVICE

Australia Post Signs Up Security Tool Customer

MELBOURNE, AUSTRALIA

NEW TEACHERS Credit Union Ltd. last week agreed to become the first user of Australia Post's VIP Online Security tool set, which lets financial institutions implement multifactor, one-time password security tokens for online banking authentication.

The tool was developed by Australia Post and Ulttradata Australia Pty. under a partnership announced earlier this month. East Malvern, Australia-based Ulttradata makes software for the financial services industry.

Roger Lee, manager of authentication services at Australia Post, said the Homebush, Australia-based credit union plans to use the VIP Online Security tools to provide an additional layer of protection for its members' Internet banking efforts.

"As the first financial institution to adopt the offering, the credit union is leading the way in protecting its members from the risks associated with online fraud and identity theft," Lee said.

Steve James, the credit union's CEO, said that customers throughout much of its branch network rely on the Internet to access accounts. "Obviously, security in online banking is our prime consideration," he said.

■ SANDRA ROSSI,

COMPUTERWORLD AUSTRALIA

India Grants Telecom Licenses to BT Group

NEW DELHI

THE INDIA Department of Telecommunications has granted BT Group PLC licenses to provide national and long-distance services in the country. The London-based provider sought the licenses as part of an effort to carve out a bigger piece of India's burgeoning telecommunications market.

The licenses allow BT Telecom India Pvt., a joint venture of BT Group and New Delhi-based energy, food and services provider Jubilant Engro Pvt., to sell telecommunications services directly to corporate customers in India, BT said. Until now, BT has provided such services through local providers.

■ JOHN RIBERO, IDG NEWS SERVICE

Compiled by Mike Buckner.

Briefly Noted

Sage MicroSage Pty., a payroll application vendor in Chatswood, Australia, has acquired New Zealand-based Australian Flagship Pty. In an undisclosed move, Sage MicroSage will incorporate Flagship's Wage Easy Product HR road map. Officials said the Flagship product will be retained after the acquisition is complete.

■ DARRIN PAUL,

COMPUTERWORLD AUSTRALIA

Red Hat Inc. last week announced plans to open a facility in Vrsac, Serbia, to provide support, research and development, and educational services to its customers, partners and developers in southeastern Europe. The center will be managed by Vienna-based VDEI GmbH. The city of Vrsac provided infrastructure and facilities for the center.

■ NANCY GOHRING,

IDG NEWS SERVICE

Genmico NV in Montreuil, France, was awarded a contract by Portugal's Mint and National Printing Office to produce a national ID card that can store biometric information such as fingerprints. The card will contain a digital signature that's legally valid for Portugal's government transactions and presented by a personal identification number. It will use the Identification Authentication Signature specification, a set of European interoperability requirements.

■ JEREMY KURN, IDG NEWS SERVICE

SAP AG's Hanning Kagerman has signed a contract to stay on as CEO through May 2008, ending recent speculation that he would leave the helm of the German software maker. Kagerman turns 60 in July; the company's personnel policy requires that executives age 60 and older renegotiate their contracts annually.

■ NANCY WEIL, IDG NEWS SERVICE

Alcatel-Lucent SA last week said that it has invested an undisclosed amount in Wilkins chip maker Sequens Communications. The investment comes a year after the two companies agreed to jointly develop a low-cost Wilkins device for 3G and 4G in developing countries. They expect to start production of that product in the second quarter.

■ NANCY GOHRING,

IDG NEWS SERVICE



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GLOBAL

Russian Educator Won't Face Piracy Charges

VEREBOCHINO, RUSSIA

CHARGES HAVE been dropped against a Russian school principal who faced up to five years in prison for software piracy, according to Russia's state news agency.

The case had drawn widespread attention earlier this month after former Soviet President Mikhail Gorbachev wrote Microsoft Chairman Bill Gates asking him to intervene in the matter.

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■ ROBERT MILLAN AND JEREMY KIRK, IDG NEWS SERVICE

Kuwaiti Firm Creates \$10.5B African Fund

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An International IT News Digest

Celcom offers mobile phone services in 14 African countries.

The company announced its African investment plans a month after launching an expansion program, code-named Acceleration, Consolidation, Expansion, aimed at tripling the company's worldwide customer base to 70 million subscribers by 2011.

"We have embarked on an issue of becoming a global company, hence we have to double our coverage by investing in the latest technology," said Al-Barrak, managing director of MTC, said in a statement.

The company plans to begin spending the fund this year in several countries where Celcom has offices, according to Al-Barrak.

■ MICHAEL MALAKA, IDG NEWS SERVICE

Nokia Plans Shakeup; 700 Workers Affected

ESPOO, FINLAND

NOKIA CORP. this month announced plans to reshuffle 700 employees, citing a need to boost its focus and efficiency. Under the

plan, some workers will be assigned to new jobs and others will be laid off.

Arja Suominen, vice president of communications, said she did not know how many employees would be let go.

Those affected include 360 employees in Nokia's enterprise solutions business group, 140 in the software platforms area of its technology platforms unit, 130 in the global IT operations division, and 30 in the customer and market operations group, the company said.

Nokia's enterprise solutions division posted losses in every quarter in fiscal 2006, including an operating loss of \$64 million (\$84 million U.S.) in the fourth quarter, which ended Dec. 31.

"It's very clear we will need to make this business profitable," said Olli-Pekka Kallasvuo, president and CEO of Nokia, during a press conference at the 3GSM World Congress in Barcelona. "We're looking at different options in order to do that."

Nokia said it is also seeking greater efficiency in the research and develop-

ment operations of its technology platforms unit.

■ JEREMY KIRK, IDG NEWS SERVICE

Australia Post Signs Up Security Tool Customer

MELBOURNE, AUSTRALIA

NINE TEACHERS Credit Union Ltd. last week agreed to become the first user of Australia Post's VIP Online Security tool set, which lets financial institutions implement multifactor, one-time password security tokens for online banking authentication.

The tool was developed by Australia Post and Ulttradata Australia Pty. under a partnership announced earlier this month. East Malvern, Australia-based Ulttradata makes software for the financial services industry.

Roger Lee, manager of authentication services at Australia Post, said the Homebusch, Australia-based credit union plans to use the VIP Online Security tools to provide an additional layer of protection for its members' Internet banking efforts.

"As the first financial institution to adopt the offering, the credit union is leading the way in protecting its members from the risks associated with online fraud and identity theft," Lee said.

Steve James, the credit union's CEO, said that customers throughout much of its branch network rely on the Internet to access accounts. "Obviously, security in online banking is our prime consideration," he said.

■ SANDRA ROSSI,
COMPUTERWORLD AUSTRALIA

India Grants Telecom Licenses to BT Group

NEW DELHI, INDIA

THE INDIA Department of Telecommunications has granted BT Group PLC licenses to provide national and long-distance services in the country. The London-based provider sought the licenses as part of an effort to carve out a bigger piece of India's burgeoning telecommunications market.

The licenses allow BT Telecom India Pvt., a joint venture of BT Group and New Delhi-based energy, food and services provider Jubilant Enpro Pvt., to sell telecommunications services directly to corporate customers in India. BT said until now, BT has provided such services through local providers.

■ JOHN RIBEIRO, IDG NEWS SERVICE

Compiled by Mike Buckner.

Briefly Noted

Sage MicroSage Pty., a payroll application vendor in Chatswood, Australia, has acquired Kenos-based rival Australian Flagship Pty. in an undisclosed sum. Sage MicroSage will incorporate Flagship's Wage Easy Payroll HR software into its own product road map. Officials said the Flagship workforce will be retained after the acquisition is complete.

■ DARRON PAUL,
COMPUTERWORLD AUSTRALIA

Red Hat Inc. last week announced plans to open a facility in Vrsac, Serbia, to provide support, research and development, and sales and services to its customers, partners and developers in southeastern Europe. The center will be managed by Vienna-based VDTEL GmbH. The city of Vrsac provided infrastructure and facilities for the center.

■ NANCY BOHRING,
IDG NEWS SERVICE

Beroula NV in Montreux, France, was awarded a contract by Portugal's Mint and National Printing Office to produce a national ID card that can store biometric information such as fingerprints. The card will contain a digital signature that's legally valid for Portugal's e-government transactions and protected by a personal identification number. It will use the Identification Authentication Signature specification, a set of European interoperability requirements.

■ JEREMY KIRK, IDG NEWS SERVICE

SAP AG's Hanning Kagermann has signed a contract to stay on as CEO through May 2008, ending recent speculation that he would leave the role of the German software maker. Kagermann turns 60 in July; the company's personnel policy requires that executives age 60 and older renegotiate their contracts annually.

■ NANCY WELI, IDG NEWS SERVICE

Alcatel-Lucent SA last week said that it has invested an undisclosed amount in Wilflex chip maker Sequans Communications. The investment comes a year after the Paris-based companies agreed to jointly develop a low-cost Wilflex device for end users in developing countries. They expect to start production of that product in the second quarter.

■ NANCY BOHRING,
IDG NEWS SERVICE



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Medical Center Tests Dual-Mode Phones

BY MATT HAMBLER

DOCTORS at the University of California, San Francisco Medical Center prompted their IT staff to launch a pilot project that could lead to a widespread implementation of dual-mode phone technology.

Plans for the project were announced by hospital officials last week.

David Sproul, manager of capital projects and emerging technologies at the UCSF Medical Center, said the project aims to let hospital staffers maintain telephone contact with callers using a single handset as they walk from place to place throughout the complex. The medical staff asked for that capability, he said.

"The project started in a serendipitous way, when a couple of physicians wanted to use their cell phones outside and walk into the building, where there are normally dead zones, without dropping the call," Sproul said. "This [project] was really driven by requests and needs of physicians."

The three hospitals that are part of the medical center have many cellular dead zones, he said, noting that some of the buildings are up to 10 stories tall and have steel bracing to protect against earthquake damage and lead-lined walls to contain radiation, he said.

The medical center has a large Wi-Fi network with about 800 access points providing coverage virtually everywhere inside its buildings, Sproul said. "We wanted to take advantage of that," he said.

The hospital will evaluate technologies that promise to allow calls to move seamlessly between cellular networks and the hospital's Wi-Fi network, Sproul said.

The medical center is about to start the second stage of a planned four-stage effort

by testing a line of new dual-mode products from DiVitias Networks in Mountain View, Calif.

The products, which DiVitias unveiled last week, include a Mobile Convergence Appliance that is deployed in a data center and Mobile Convergence Clients that are deployed on handsets, the company said.

The MCA 1000 appliance with a 10-user MCC license starts at \$5,495 and is available now.

Four Launching Stages

Sproul said that the UCSF Medical Center has completed the first stage of the effort by validating in a lab test that the DiVitias technology could work adequately with the

center's Cisco Systems Inc. wireless access points and its Siemens AG HIPAT 4000 voice switch technology.

The second stage of the project began earlier this month with a small deployment of the DiVitias technology for six medical center IT workers, Sproul said. The test deployment is expected to continue for about 60 days, he said.

The third stage, also expected to last about 60 days, involves rolling out the technology to facilities workers at multiple sites at the medical center, Sproul said.

The fourth and final phase will involve rolling out the technology to physicians by the end of this year, he said.

The medical center expects the first parts of the effort to



UCSF Medical Center's pilot project could lead to a widespread implementation of dual-mode phone technology.

cost about \$250,000, Sproul said. The amount of any additional costs will depend on the results of those efforts, he noted.

Medical center officials hope that in addition to maintaining links to calls across the cellular-to-Wi-Fi boundary, the new system will enable hospital staffers to use just one device instead of multiple phones. That would result in a cost savings, Sproul said.

"We're not sure how much we'll save, but our goal was to provide functionality to users," he said.

If the early phases of the project are successful, Sproul

said, hundreds of medical center employees could ultimately be affected by the project. He noted that about 400 cell phones and nearly 900 additional SpectraLink phones working in operation at the medical center fall into the Wi-Fi network.

In addition, he said that nearly 1,100 long-range pagers could be replaced by the new technology if the tests are successful.

DiVitias said its new gear works alone or with PBX voice systems and can interoperate with any Wi-Fi infrastructure.

The technology also supports dual-mode phones. Wi-Fi-only phones, cellular-only smart phones, and softphones running on PCs or other devices, the company said.

The MCC client software can be downloaded over the air to the handsets, DiVitias said. *

Jenny Craig Beefs Up Security on 500-Site WAN

BY MATT HAMBLER

Weight management company Jenny Craig Inc. needed to upgrade its WAN to improve the security and availability of data sent daily from 500 locations in North America to its headquarters.

Data privacy was the most important consideration as the company studied upgrade paths, noted Alessandra Nicoletti, director of strategy at Jenny Craig.

Nicoletti said that the data sent from the company's weight management centers to its headquarters facility in Carlsbad, Calif., contains private information about customers, including their weight and the steps they are taking to manage it.

"We needed to figure out a secure solution for polling data and doing it quickly over the Internet with a fail-over solution," said Nicoletti.

Last year, Jenny Craig hired Las Vegas-based Igmus

We needed to figure out a secure solution for polling data and doing it quickly over the Internet with a fail-over solution.

ALESSANDRA NICOLETTI,
DIRECTOR OF STRATEGY,
JENNY CRAIG INC.

Technologies Inc. as a systems integrator. Together they chose SonicWall Inc. in Sunnyvale, Calif., to provide WAN security technology for the project. The SonicWall technology includes hardware and software that allows deep packet inspection for viruses, along with management and monitoring capabilities, Nicoletti said.

Earlier this month, SonicWall T2 Series Internet security appliances were deployed at about 53 of the Jenny Craig

centers, she said.

The appliances are used to transmit data from Wi-Fi access points to the company's headquarters via Digital Subscriber Line. "DSL has been sketchy, so we needed fail-over to dial-up," which the T2 Series appliances also provide, said Nicoletti.

The appliances are slated to be deployed at all 500 Jenny Craig locations within about six months, she said.

In addition to fail-over, the appliances offer Triple DES encryption, Nicoletti noted. "No way can anybody get to the data," she said.

The SonicWall appliances have enabled the company to do away with two positions dedicated to handling the older dial-up-only transmissions, Nicoletti said. One of the affected workers has left the company, and the other was assigned to other IT tasks, she said.

Jenny Craig has also in-

stalled two SonicWall Pro Series 5600 gigabit firewalls at the corporate data center in its headquarters facility. The Pro Series appliances are used to monitor the appliances in the field and will eventually allow the company to deploy security policy configurations on the full 500-center network, according to Igmus.

Each of Jenny Craig's local facilities will connect over a WAN back to one of the firewalls in a high-availability fail-over configuration, Igmus said.

Nicoletti would not disclose the cost of the project, but she said several firewall technologies were evaluated, and SonicWall gave the best bang for the buck.

She said that Jenny Craig considered competing offerings from Fortinet Inc. and Cisco Systems Inc. At the time of the evaluation, she said, the Cisco offerings did not incorporate Triple DES encryption capabilities. *



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DON TENNANT

'China Apologist'

IGOT such a kick out of a review of Computerworld that's posted on Amazon.com that I just had to share. For one thing, I feel like a proud papa because the reviewer lavished so much praise on the crew here. There's another, more entertaining reason, but I'll get to that in a moment.

If you're reading this in print, you likely receive the publication at no charge because you're a qualified subscriber whose professional demographics appeal to our advertisers. Otherwise you'd have to pay for it, and one way to do that is to go to Amazon.com

and take advantage of the incredible, bargain-basement price of only \$99.99 (that's less than \$100) for a one-year subscription.

The reviewer, who describes himself as a longtime IT professional, gives us four (out of five) stars, and headlines his review with the statement, "Very current, in-depth reporting and high writing standards make this my favorite IT periodical." Noting that Computerworld is the only IT publication he reads regularly, he effuses that it's "relevant, smart, and covers an almost impossible range of topics in a very broad IT world."

Now, here's the entertaining part — the reviewer's final paragraph:

"My biggest problem has to do with the Editor in Chief. I hardly ever agree with Don Tennant's editorials, and think he's more of a China apologist than anything else. Still, his magazine is a very good one, and worth reading for anyone in the IT industry who needs a really good view of what's going on today. I can tolerate his dumb opinions, so long as the rest of the magazine remains so good."

I guess I got a kick out of it because it was so blunt and brutally honest, as any worthwhile review should be, and because the newsroom is likely to have some fun with it. I'm fully expecting to be called "Chap" (short



In a world of Computerworld, Connect with us.

for "China apologist") for a while.

I suppose the reviewer labeled me that way because of the positions I've taken on such matters as China's rights relating to Google's operations there (it's not our place to dictate what the Chinese government should or shouldn't censor in that country) and the outcry here over IBM selling its PC business to Lenovo (Lenovo's China connection doesn't make it a security nightmare, so try to relax).

For the record, I'm disinclined to

serve as any country's apologist, I would imagine there are very few countries on the planet that aren't doing something that warrants justification to the rest of the world, so I see no reason to single out any one of them as being in particular need of an apologist.

But if we are going to single China out, consider this: If you've been to Beijing, you know that there are two slogans emblazoned across the entrance to the Forbidden City. The one on the left reads, "Zhong Huo Ren Min Gong He Guo wan sui," or, "Long live the People's Republic of China." No big shock there.

But then there's the one on the right. It reads, "Shi jie ren min do fuon jei won sui." It means, "Long live the unity of the peoples of the world." I was born in Washington, and I've spent a lot of time in our capital city. To my knowledge, there's not an inscription on any of our buildings or monuments there that conveys that sentiment of international harmony. If there is, it's certainly well hidden. We don't need an apologist to justify that. But it wouldn't hurt for us to think a little more along those lines. *

Don Tennant
Editor in Chief
Computerworld

Don Tennant is a consultant helping companies design computer stores. She has served as a PITTA for 12 years. You can contact her at www.dontennant.com.

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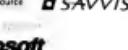
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SaaSCon

Conference at a Glance

TUESDAY APRIL 17, 2007

8:15 - 9:00

KEYNOTE The Future of On-Demand

Jim Steele

 Jim Steele

9:00 - 9:45

KEYNOTE Security as a Service

Ari Wong

 Ari Wong

10:15 - 11:00

KEYNOTE Evaluating the SaaS Infrastructure

Treb Ryan

Rich Kennelly

 Treb Ryan

 Rich Kennelly

Jeff Kaplan

 Jeff Kaplan

11:00 - 11:45

Focus Topic Areas:

SaaS ON THE GRID?

Paul Volchek

Brett Come

 Paul Volchek

 Brett Come

 Jeff Kaplan

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On Demand is In Demand

Tuesday April 17th Continued

4:15 - 5:00 KEYNOTE Soos - Enabling the Year of the Consumer



Greg Gionforo

5:00 - 5:30 KEYNOTE Changing the Game - What Video Games can Teach us About Solving for User



Adolphon Paul Johnston

WEDNESDAY APRIL 18, 2007

8:30AM - 9:15 KEYNOTE Aneel Bhusri



Dave Duffield

Bill McNeese

9:15 - 10:00 KEYNOTE Platforms and Ecosystems



Don Best

Sinclair Schuller

Renee Bonvouloir

Phil Womewright

10:00 - 10:40 KEYNOTE Jeffry Niles, President & CEO, SaaSCon West



Focus Topic Areas

OVERCOMING THE INTEGRATION HURDLE: PERVERSIVE CUSTOMER CARE STUDY
David Imber

SALES PERFORMANCE MANAGEMENT

Christopher Cabrera Michael Tarto

ANATOMY OF A SaaS APPLICATION
Gianpolo Corrao

11:45 - 12:30PM Focus Topic Areas
INTEGRATED SECURITY, KEEPING PACE WITH SHIFTS TOWARDS COLLABORATIVE COMPUTING

Jeff Kellmer Dick Hardt

THE INGREDIENTS OF SaaS COLLABORATION
Uma Rao, Director of Research, Sridhar Vembu

IT MANAGEMENT WITH SaaS
James Molocco

Focus Topic Areas:

FEDERATING SaaS APPLICATIONS

Andre Durand

SaaS PPM: BENEFITS FROM AN END-USER PERSPECTIVE

Jeffrey Follis, Director of Product Management, Oracle

Ann Huffley, Vice President of Marketing, Oracle

Gerry Skipwith, Vice President of Marketing, Oracle

CROSS ENTERPRISE DATA INTEGRATION AS A SERVICE

John Hegstrom, Principal Architect, IBM Direct Data Integration

3:15 - 4:15 KEYNOTE Understanding the Intersection of SaaS and SOA, Web 2.0, Enterprise 2.0 and Office 2.0
Dave Mitchell Rajen Sheth, President, IBM Software Group
Brett Caine Amy Wohl, President, IBM Software Group

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meet with him and ask whether there is something different you should do. If you've already had that discussion and didn't agree with or understand his comments, it's time to meet with human resources. But if you don't take action, you'll remain a PITA, and eventually you will be.

The co-worker PITA: When a co-worker affects your performance, you could request a new assignment. But first, think about how much of your pain is caused by style. Does the PITA work differently than you? Perhaps he talks all the time, or not at all. Try restructuring your encounters to fit his style and see whether that decreases your pain. The more people you can work with, the higher your value will be within your company.

Sometimes, though, you'll encounter a super-PITA — someone who succeeds only by creating problems for everyone else. You know someone has gained super-PITA status when your supervisor stops your complaints to tell you stories that are worse than anything you've experienced. Eventually, the super-PITA will cause pain for a senior executive and be fired. In the meantime, you'll need patience and support from your supervisor to survive.

Fortunately, super-PITAs are rare. Most of my PITAs have been small, causing pain that didn't extend past me. A few have had to be fired. But once I improved my processes, the ones who remained ceased being PITAs. In reducing my pain, their pain was reduced too, and many a PITA ended up among my best customers. □

BEN ROTHKE

The IEDs of Corporate Networks

READING ABOUT improvised explosive devices (IED) in Military & Aerospace Electronics got me thinking about information security. According to Annie Turner's article, although the U.S. is spending hundreds of billions of dollars on the Iraq war, it is losing soldiers left and right to IEDs that cost a few bucks. IEDs are typically detonated by

simple electronic devices like cell phones or garage door openers. They can be jammed, but locating those low-power signals among a lot of noise is difficult — and they usually aren't found before it's too late.

How do IEDs relate to information security? Companies spend billions of dollars on secure hardware and software to protect their networks from sophisticated hackers who try to break in with state-of-the-art tools. But those efforts have no effect on the IED of the corporate world: the trusted insider. If your network is breached by a typical hacker, the effects will likely be a basic port-scanning exercise or a denial-of-service attack.

But insiders have no need to bypass the physical and digital perimeter controls you have in place, and they have enough knowledge of the corporate and network topology to gain quick access to terabytes of corporate data.

What can you do to mitigate the risks of insider threats? The following five steps are a start. They must be executed within the framework of a formal



BEN ROTHKE is a senior security consultant at International Network Services and the author of *10 Things Every CIO Should Know About the Web*, due in March. You can contact him at ben@rothke.com.

program to deal with risk and the insider threat.

■ **Get real about the danger.** Most managers deride the very idea that their insiders would do malicious things on their networks. Of course, those same managers padlock supply closets to protect precious stocks of pencils, paper and printer toner. So why don't they lock the digital closets as well?

A great place to get a realistic understanding of the scope of the threat posed by insiders is at the CERT Insider Threat Research page (www.cert.org/insider_threat), which offers a lot of valuable information on the subject.

Naturally, you can't forget that insiders are the people who keep your organization going. The vast majority of insiders are loyal and trustworthy. Unfortunately, all it takes is one bad apple to do a lot of damage. Controlling those bad apples is what this is all about.

■ **Know your network.** Far too many organizations have no idea what their networks look like or even what assets

are on them. In such a climate, insiders can carry out attacks using network paths that management knows nothing about.

If you don't know where your network starts or stops, then you can't protect it.

■ **Perform periodic enterprise risk assessments.** They'll ensure that you are worrying about the right things.

■ **Monitor.** Do you know what your users are doing on the network? Do you know which users have had what kinds of disciplinary problems? Talk to HR.

■ **Control.** All operating systems have significant levels of access control capabilities. But if those controls are not activated, then users will walk all over the network. You paid for the software, and it is imperative to use these and other controls to restrict access and accounts.

Insider abuse of digital assets is a reality. Denying it is only denying gravity. Organizations must understand the threats and have a plan to deal with them. If they don't, their corporate data will be pilfered by insiders. □

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READERS' LETTERS

Survey Wrong on Offshoring's Effects

THAT SURVEY is bunk [“Survey: Offshoring Does Not Cost Developer Jobs,” Computerworld.com, Jan. 16]. Offshoring holds down compensation for all IT workers. It may be true that almost none of the companies surveyed had displaced any developers, but nonetheless, the use of offshoring means demand for workers has cooled in the U.S., thus lowering wages. It makes it less likely that U.S. students will be attracted to IT and more likely that IT workers will become disillusioned and find a different career.

John R. Carter
Amitec, Ill. jrcarter@cap.org

many professionals have left IT because of a lack of jobs. To solve this problem, we want to bring in foreigners to take the limited number of jobs available rather than encourage our students to enter these fields [“Bush Wants H-1B Visa Cap Hike,” Computerworld.com, Jan. 25]. There's something wrong with this picture.

Linda H. Peterson, CDP, PMP
Ph.D. candidate in IT management, San Antonio

Readers' Peeves About OS X, Vista

I DO NOT understand Computerworld's love-struck zeal for all things Mac. [“We'll Don't buy Windows Vista,” Computerworld.com, Jan. 25.] I am forced to use Mac OS X every day in my office, right along with Windows, and my choice for any task, hands down, is Windows. Even after five years of using it, I find OS X to be clumsy. It forces the user into strict paths of uncreativity and,

if the user wants to do anything really interesting, requires just as much in-depth understanding of the ins and outs of the platform as any Windows platform. I don't like the Mac's simplistic metaphor, and I don't like its look and feel.

For anything routine, I retreat to my Windows box and sigh with pleasure at the ease of accomplishing things that cause headaches on OS X. And as for development, the Macintosh is eight years harder to develop for than any Windows box. I know, because I've been developing on both for the past five years.

John A.M. Domel
Software developer, Walworth Publishing Co., Brookfield, Minn.
John.Domel@Walworth.com

I AGREE. Don't buy Vista, not now, ever. After using IE7 for several months, both in technical beta and in the release version, I find that it stinks. Vista is designed and built much the same way. The interface is nonintuitive,

I have learned new interfaces many times in my 35 years of computing, but IE7 and Vista are a step backward in the usability department. And Vista is more expensive than any previous release to boot. I'd rather learn Linux than suffer any more dumbing down by Microsoft and its apparent philosophy of “You want to customize? No way! Have it our way.” If I can't have it my way, I don't want it at all.

Richard Wink
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COMPUTERWORLD welcomes comments from its readers. Letters will be edited for brevity and clarity. They should be addressed to James Eckler, letters editor, Computerworld, PO Box 9701, 15 Queen Street, Framingham, Mass. 01701. Fax: (508) 679-4843. E-mail: letters@computerworld.com. Include an address and phone number for immediate verification.

STRATEGIES & TACTICS

Most companies still lack policies for virtual offices. Here are

the huge data risks they pose.

HOME OFFICE LOCKDOWN

By Mary Brandel

Inside

Less Unwanted Duplication Overnight!
Data de-duplication technology eliminates redundant information. Analysts say this diet can shrink 20TB of data into 1TB of backup data. **PAGE 30**

Q&A: Marshall Van Alstyne **PAGE 33**

IT Mentor **PAGE 34**

Security Manager's Journal **PAGE 36**

Opinion: Robert L. Mitchell **PAGE 38**

TELECOMMUTERS ARE nothing new at TriNet Group Inc., a human resources outsourcing in San Leandro, Calif. In fact, a significant part of the company's workforce operates remotely, either out of their houses or in small satellite offices, all on laptop computers, according to Bob Dehnhardt, the company's network and information security manager.

But over the past 18 months, Dehnhardt has grown increasingly concerned about the rising number of mobile computer security breaches in the news, most notably the theft of a laptop and external drive from a U.S. Department of Veterans Affairs employee — an incident that compromised

the personal data of nearly 4.5 million veterans and military personnel. So last year, he helped institute a series of security policies, including a requirement that employees who work at home must sign a contract.

One of the contract's provisions states that such employees must be willing to open their homes for inspection.

"Working from home is a privilege, not a right," Dehnhardt says. "It has numerous advantages to both the employer and the employee, but it also constitutes a very real security risk for the company. There have to be rules and policies in place to protect the employer from this risk, and both parties must agree to them."

But TriNet is ahead of the curve in home-worker security. Despite network attacks, virus outbreaks, data loss and other hazards that remote users can introduce, many U.S. companies haven't bothered to establish security policies for teleworkers, according to Runzheimer International Ltd., a Rockville, Md.-based provider of employee mobility products and services. In Runzheimer's 2006 survey of 87 organizations with mobile workers, 62% of respondents said they were concerned about the security of company assets located off-

Continued on page 28

INFRASTRUCTURE LOG

DAY 53: We have so much information. Data. E-mails. Web content. Video. But it's scattered across the business. We can't find anything we need.

Gil says he needs a hand. Alas, I'm afraid of heights.

Day 54: Here's something more grounded: IBM Information Management middleware. Now we can access any kind of info and accurately deliver it to the people or processes that need it. It gives us information we can trust and insights we can act on to deliver real business value.

Once again, this accursed acrophobia makes me the object of my colleagues' ridicule.

Information Management

Take the Information On Demand Assessment at:
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Continued from page 26

premises, but only 46% reported that they have a virtual office policy.

"A lot of companies are just hoping that nothing will happen," says Jack Gold, a mobile technology consultant at Runzheimer. "And yet for a reasonable amount of effort, they could eliminate 90% of the potential problems."

For starters, telecommuters should use only company-owned equipment for their work, not their own home computers, Gold says. That way, IT can ensure that the equipment is loaded with virus protection software and other control devices. By keeping operating systems and application versions standardized, IT can also centrally manage virus updates. "If you rely on the end-user community to take care of their own systems, you're in trouble," Gold says.

At TriNet, telecommuters use centrally managed laptops. "This gives us a means of enforcing policy, since we own the equipment, and it also reduces the workload on our support people, since they don't have to troubleshoot why Bill's World of Warcraft installation broke our critical internally developed application," Deinhardt says.

Another Method

The American Academy of Ophthalmology takes a different approach to managing security for home workers' computers. Until recently, the organization used only the security available in Microsoft Windows Active Directory and its virtual private network (VPN) software.

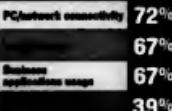
As viruses began disrupting bandwidth on the corporate network, however, Vice President of IT Joe Carr decided to take further measures. He installed Safe Access, an appliance from Superior, Colo.-based StillSecure that ensures that user devices have updated virus-protection software and appropriate firewall status before allowing them on the VPN. "We've had productivity in the office interrupted due to viruses, so we needed to make a change in the way people managed their equipment outside the office," Carr says.

Carr is also testing a policy in which Safe Access will check on the last time home workers performed virus scans on their machines. If more than a certain amount of time has passed, it will require a scan before allowing the device onto the VPN. "We test new policies with users to make sure the action is working before ratcheting it up academically wide," he says.

Another TriNet policy forbids home workers from storing corporate data long term on their laptops. Deinhardt

TRAINING FOR VIRTUAL OFFICE EMPLOYEES

Percentage of organizations that offer their teleworkers the following types of training



Source: 2006 Computerworld Survey of Telework Report, October 2006

says, although he doesn't know of any technology to help him enforce that. Instead, telecommuters are expected to access data through the company's VPN and store data on network home folders, which are backed up nightly. They're also discouraged from using USB or thumb drives because they can easily be lost or stolen.

Of course, some data must reside on the laptop for times when the employee has no network access, like during customer visits. In such cases, remote workers are instructed to take only the data they need for that visit and delete it after saving any changes to the network drive, Deinhardt says. "It's a fine line to walk," he acknowledges.

Mark Rhodes-Ousley, an information security architect and co-author of Network Security: The Complete Reference (McGraw-Hill Osborne Media, 2003), agrees that data should mainly reside in centralized corporate repositories. "Home workers should be granted access to view and change data only from a distance," he says. That can be facilitated with systems that provide front-end access, such as Secure Sockets Layer VPNs.

Remote access makes the home computer a part of the company network, Rhodes-Ousley explains, whereas front-end access makes only the user interface accessible, separating users and their computing environments from the actual servers that manage the data. This technique presumes that users have a good broadband connection, Gold says, because dial-up could never handle the traffic load.

Everyone agrees that home workers should keep data encrypted, but relying on end users to do that is risky, says John Girard, an analyst at Gartner Inc. "Typical office applications have the ability to encrypt," he says, "but

the choice is often voluntary, and the user can usually choose a simple, weak password and encryption algorithm."

That's why it's best to run the home PC as a virtual machine that's encrypted, where the user logs on to bring up an image of a company workstation, he says. Or home users could run an demand virtual session that encrypts saved data even if the workstation is otherwise not managed by the company, Girard says. This is possible with software such as Cisco Systems Inc.'s Secure Desktop, Symantec Corp.'s On-Demand Agent and Check Point Software Technologies Ltd.'s Integrity Clientless Security Secure Workspace.

At TriNet, all home laptops are encrypted using software from Beachhead Solutions Inc. in Santa Clara, Calif. The software provides centralized encryption management and remote data destruction if the laptop is lost or stolen. Deinhardt uses IPsec for encryption on TriNet's VPN, and he requires home wireless networks to be encrypted using Wi-Fi Protected Access when accessing the VPN. The only way to enforce this now, however, is through a signed statement and employee training, he says. "We don't have the [resources] to support home wireless equipment," he says. "It's better to

educate the users to protect their home environment than to do it for them."

Deinhardt also advises home workers to change their default service set identifier and administrator passwords on their wireless access points.

This year, TriNet managers will also periodically visit the homes of remote workers, in accordance with the company's policy for inspections of home offices for ergonomic, safety and security reasons. "If employees do not agree to this, their VPN access and laptops will be pulled, and they will not be allowed to work from home," Deinhardt says.

This is an unusual policy among U.S. companies, according to the Runzheimer study. Only 13% of respondents said they conducted irregular or initial inspections as part of their virtual office policy. "There are some privacy concerns as to how frequently these inspections should take place and what advance notice is required," says Heidi Skarud, a vice president at Runzheimer. "But companies absolutely have the authority to enforce security policy in people's homes."

Brandel is a Computerworld contributing writer in Newton, Mass. Contact her at marybrandel@verizon.net.

ON GUARD

Here are some tips from research firm Gartner for ensuring that home workers' wireless networks won't harm the corporate network or expose sensitive company information.

- Turn off the service set identifier broadcast so all internal, nonpublic, unguest access points. When this feature is off, the access point won't advertise its presence and will let guest clients ignore calling access points.
- Migrate to WPA2—available wireless LAN network interface cards (NIC), wireless drivers, supplicants and access points on all new purchases. Require the current best standard, WPA2, on all new WLAN equipment. Devices with non-WPA2 operating systems, especially smaller handheld devices, may need to use a third-party WPA2 supplicant.
- Install a personal firewall in every laptop with a wireless NIC. Wi-Fi

- capabilities open up another attack path against laptops, particularly when they are in public hot spots. The personal firewall built into Windows XP has minimal capabilities but is better than nothing.
- Keep WLAN card drivers up to date. Vulnerabilities have already been discovered in some WLAN card network interface drivers that can cause exposure down to Layer 2 in the network stack.
- Turn off the broadcast function on all WLAN cards and link to other client systems without involving an access point, thereby losing all protection brought by strong authentication. Permanently disable this feature in registry settings.
- Don't allow wireless and wired NICs to be active at the same time on a client system. When a client device is connected to a wired LAN, malicious software could use the wireless network for eavesdropping and network bridging.

— MARY BRANDEL

IBM

INFRASTRUCTURE LOG

DAY 34: This indecision is sinking the business.
How do we move to a service oriented architecture?
Where do we start? Can we reuse what we have?

Infrastructure quicksand!! We waited too long. I'd
thrown Gil my tie, but it's a clip-on.

DAY 37: A lifeline: IBM WebSphere middleware! It's
already helped thousands of customers build an SOA.
Adapters give us a standardized approach to integrating
apps from SAP, Oracle and others. And it lets us reuse
what we have, saving time and money.

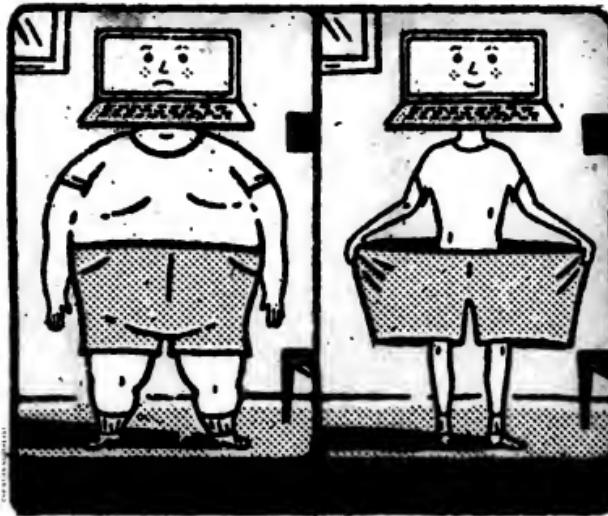
Oh, great. There's sand in my yogurt.



WebSphere

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IBM.COM/TAKEBACKCONTROL/CONNECT

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Data de-duplication technology eliminates redundant versions of the same information, yielding a **dramatic reduction** in backup data.

By Jennifer McAdams

IT's overstuffed closets, cluttered enterprise backup operations scream for attention. Fortunately, vendors are coming out with data de-duplication functions — packed into storage software suites or in stand-alone appliances — that sort through data destined for the archives and eliminate the redundancies.

Analysts say the technology can provide a 20-to-1 reduction of backup data. In other words, 20TB of original data can be shrunk to 1TB for backup purposes (see "Measuring Shrinkage," page 32).

Eliminating duplicate data seems like a no-brainer, but in the past, corporations were leery of losing data on its way to backup repositories. Only now are they getting comfortable with the reliability of de-duplication technology, which has matured thanks to advancements in data transfer techniques and standards. Specifically, the rise of Advanced Technology Attachment and Serial ATA technologies, along with huge spikes in processing power, have fostered better de-duplication functionality.

Suddenly, de-duplication is catching on big time, attracting big-name vendors such as EMC Corp. and Symantec Corp. In November, EMC acquired de-duplication vendor Avamar Technologies Inc., and now EMC is incorporating de-duplication into its Clariion, Centera and NetWorker product lines. Meanwhile, Symantec is reportedly scrambling to inject de-duplication capability into its Veritas Net-Backup storage management software.

The premise behind de-duplication is as fundamental as it sounds. "Imagine having a Word document that was several megabytes in size. If you e-mailed that to a colleague who then added one word to that document, some [systems] would determine that this was a new document that needed to be backed up again," says Jason

Paige, information systems manager at Integral Capital Partners, an investment firm in Menlo Park, Calif.

To make sure files such as Word documents with minor tweaks aren't stored several times over, ICP uses Avamar's de-duplication technology.

Corporate IT's comfort level with the technology has increased to the point

Continued on page 32

LOSE UNWANTED GIGABYTES OVERNIGHT!

IBM

_INFRASTRUCTURE LOG

_DAY 27: These compliance regulations are killing us! Audits. Inconsistencies. Processes. Time. Money. I feel like I'm being chased by regulators.

_Oh, wait. I am being chased by regulators. Run!!!!

_DAY 28: I've got it: IBM Tivoli middleware. It automates system administration to standardize compliance policies. It centralizes processes to minimize the headaches of new and ever-changing regulations. And it helps pinpoint security issues before they become problems and maintains business integrity.

_Gil is bummed we had to ditch the high-carb diet.



Tivoli.

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HASH IT OUT

Naturally, companies considering de-duplication are wary of losing vital data that's falsely deemed duplicative. "When we looked for a de-duplication technology, we wanted to make sure that the de-duplication logic did not base its decisions on [bad] assumptions," says Oded Tagger, an IT manager in charge of business continuity and disaster recovery planning at the The First International Bank of Israel Ltd. Israel's fourth-largest bank, FIBI relies on de-duplication technology included in Diligent Technologies' virtual tape software, running on a dedicated Linux server that's "zoned" for disk storage. "This replaced our traditional tape library," Tagger says.

To make the most precise comparisons between potentially duplicative sets of data, de-duplication technology first breaks data into chunks through the use of hashing algorithms, usually MD-5 (Message Digest Algorithm 5).

Continued from page 30

where some IT executives wonder whether de-duplication could extend from backup operations to disaster recovery and even primary storage. But first there are lingering questions about where best to insert de-duplication functionality in the backup process: at the client, at the disk or at the virtual tape library (VTL).

IT managers will have to ask vendors hard questions, because de-duplication methods vary significantly by vendor. "There is still a lot of confusion in the market about what data de-duplication is and isn't — and where it is best done. This confusion can delay adoption," says Heidi Biggar, an analyst at Enterprise Strategy Group Inc. in Milford, Mass.

But whatever confusion exists, corporate IT shops shouldn't be stamping for too long. "There are pros and cons to each approach, but all have potentially significant benefits for users by allowing them to reduce the amount of [storage] capacity they need on the back end," Biggar says. The benefits extend to other areas, too. For example, de-duplication can reduce the network bandwidth required for long-distance data replication, she says.

Where to De-Dupe

Data de-duplication can take place either at the source or at the point where data is being written to disk systems or VTLs. "The packaging of this functionality can occur in three ways: as software, which can be stand-alone or integrated with the backup software; as a disk gateway or disk array; and, lastly, as a VTL," explains David Russell, an analyst at Gartner Inc.

Avamar and Toronto-based Asigra Inc. take the first route by performing de-duplication in backup and recovery software running on a protected server — before sending the data across the network to backup repositories.

Paine, an Avamar user, explains the process this way: "Scheduled jobs start at predetermined times of the day to 'snap up' the data. During this snap-up,

A hash is a mathematical representation of a stream of data that MD-5 and other algorithms use to check for differences in data content.

On rare occasions, two chunks of data with differing content are assigned the same hash value. That is called a hash collision, and it could result in the destruction of data falsely identified as a duplicate. "Hash collisions would constitute a false positive and could happen. However, mathematically, a disk failure is much more likely than a hash collision," says Gartner analyst David Russell.

Somewhat de-duplication vendors are moving to Secure Hash Algorithms (SHA-1 and SHA-2) — developed by the National Security Agency — in hopes of avoiding hash collisions, Russell says. "The choice of hashing algorithm," he adds, "is part of what constitutes a vendor's secret sauce."

— JENNIFER McADAMS

the client software compares the data that is located on that client with the data that resides on the server — and only transfers the new or changed data to the server. This allows us to transfer large virtual data sets using very little bandwidth."

Some vendors take a second approach, relying on in-line, disk-based products that expunge duplicate data after it's shipped to a disk repository. Vendors using this method include Data Domain Inc., Diligent Technologies Corp. and ExaGrid Systems Inc.



Measuring Shrinkage

Storage vendors touting data de-duplication gains usually state their claims as ratios, comparing the amount of space it took to house multiple copies of the same data with the space required for de-duplicated data.

"We have found that it is not uncommon for these solutions to provide 20-to-1 reduction of backup data," explains Enterprise Strategy Group analyst Tony Azevedo in a report on de-duplication. "For example, if customers can back up 2TB of data on 1TB of disk capacity, think about the implications of this. If a storage system costs \$100 per GB, after de-duplication, it would cost \$5 per GB."

Of course, de-duplication vendors aren't shy about making big promises. "I've heard claims that range from 20-to-1 all the way to 800-to-1. I think 20-to-1 or 50-to-1 is realistic," says Gartner analyst David Russell.

However, your mileage may vary. "The more duplicated data you have, the more opportunity you have to reduce that volume," says Russell, "and some enterprises could easily get to 100-to-1."

— JENNIFER McADAMS

Michael Bailess, network administrator at American National Bank and Trust Co. in Danville, Va., is an ExaGrid appliance customer. "Our [system] takes data from the staging area to the repository. Only those files with changes are then stored in the repository," Bailess says. The result is a "huge reduction in the amount of files we store," he says.

The way ExaGrid handles data reduction meant that we were able to purchase a much smaller storage system than we would have with other types of products," Bailess says, adding that the ExaGrid product cost his company less than \$200,000.

Data Domain, which uses an approach similar to ExaGrid's, says its appliance can spread the benefits of de-duplication to geographically dispersed sites. That was a key selling point for Troutman Sanders LLP, an Atlanta-based law firm.

"We have 15 offices but were able to quickly get de-duplication services down pat, since the device is shipped to the location and replication is done locally," says IT manager John Thomas.

The de-duplication investment really paid off, says Thomas. "We have been able to take 365TB of data and store 41TB. We are also able to produce instantaneous responses for users looking for archived data without having to deal with our tape-handling system," he says.

The third approach to data de-duplication is employed by vendors such as FalconStor Software Inc., Quantum Corp. and Sepaton Inc. These vendors offer data de-duplication as extensions of their VTL systems and perform the task outside of the backup process.

The systems in this category write all data to the VTL and then run a de-duplication process after the fact. This method ensures that de-duplication won't interfere with backup operations and has zero impact on backup windows and operations, the vendors claim.

The Trade-offs

It all sounds easy, but of course there are complications and trade-offs. For example, regardless of the chosen de-duping method, "performance degradation can be an issue," says Enterprise Strategy Group's Biggar.

Specifically, companies performing de-duplication at the source run the risk that this function will get in the way of the primary task at hand — protecting data as it is ready for offloading to backup storage systems. "The potential disadvantage here is that de-duplication can steal memory cycles from the backup servers," Gartner's Russell says.

After-the-fact de-duplication poses challenges, too. More upfront capacity is required to store data that will be de-duplicated in postprocessing, says Biggar. "However, capacity is released after the de-duplication is complete," she notes.

But Biggar is quick to add that any trade-offs pale in comparison to the benefits of de-duplication. Her conclusion: "USC Labs has tested several vendors' de-duplication technologies and has had no issue implementing or using the technologies, and we have substantiated vendors' data reduction claims. In general, the benefits of data de-duplication far outweigh any negatives." *

McAdams is a freelance writer in Vienna, Va.
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How IT Makes Johnny More Productive

Tech-enabled multitasking leads to productivity gains at the desktop, a new study shows.



Marshall Van Alstyne

Q&A In the past decade, studies have shown that IT leads to increased corporate productivity, but until recently, no one had measured how it affects work at the individual desktop level. Marshall Van Alstyne and co-authors Simon Aral and Erik Brynjolfsson recently completed a five-year study analyzing 1,800 projects and 125,000 e-mails to see how IT affects individual productivity. (The National Science Foundation, Cisco Systems Inc. and Intel Corp. sponsored their work.) In December, their research won the award for best paper at the International Conference on Information Systems, the largest academic IT conference in the world. Van Alstyne talked with Kathleen Melymuka about the authors' initial findings.

What did your study cover? We looked at white-collar workers — executive recruiters. We wrote software to track e-mail communications over a year, and we tracked five years' worth of project activity. We chose extremely measurable output: dollars generated, contracts executed, start and stop dates of projects. These were highly representative of task-based work in sales accounting, consulting, law — all kinds of things. We interviewed and surveyed employees as well. It was voluntary, but less than 85% participated in the study. Then, at the individual and team levels, we ran analyses and figured out which variables are the best explainers of productivity.

What technologies did you look at? We asked employees how they were spending their time and where they were getting the greatest value: internal databases, external databases, other technologies, phone, face to face.

And you found a correlation between IT use and productivity? Absolutely yes, though not always as we had expected. If you look across e-mail and social networks, database and phone, the surprise was that overall, IT use is not associated with an increase in speed. In fact, it's associated with slower speed. But we found that heavier IT users are much heavier multitaskers, so over time, they're completing more projects and bringing in more money for the firm.

How does that work? Heavier IT users are taking on more work. This slows down the work they're already doing, but because they're doing so much more, they're more productive. So simply looking at speed, they might at first appear to be slower, but since they're multitaskers, they're more productive overall. The lower IT users are doing tasks serially, but high IT users are doing tasks in parallel.

Can you hit a wall while multitasking?

The relationship between multitasking and productivity is an inverted U shape. Up to some point, productivity increases with multitasking, but past that point, multitasking detracts from productivity. Heavy IT users have more capacity for multitasking, so we'd say polish your IT skills but know your limits.

Which technologies support multitasking?

The technologies that support multitasking best are asynchronous: e-mail and database work. You can use those when you have time, as opposed to synchronous [technologies]. Face-to-face interviews was [considered] very powerful. Everyone wanted more of that, but it needs to be used selectively for project setup and teardown because it's so expensive. You need to use face to face to clarify ambiguity and communicate lots of information where subtle points need clarification.

What else did you learn? Another surprise is that one of biggest predictors of productivity is social networks — the people you communicate with over e-mail. Social network analysis have indicators of where you are in the network — whether you're central or peripheral. If you measure the shortest communication path between each pair of individuals, the number of times anyone else appears in that

path gives you "betweenness." That means they're in the thick of information flows, and it's a good predictor of their productivity. Another measure is reach. If you take the number of people you talk to and the number they talk to and take out the people who are the same, reach is the number of people you wind up reaching in one, two or three hops. The more you wind up having reached, the more diverse your information is. That affects the news you will have access to. To the next round of analyses, we'll analyze this.

What should businesses take away from this study? Invest in IT skills. High IT skill levels reduce the perception of information overload and facilitate multitasking, which is directly associated with increases in revenue. But don't necessarily expect high IT users to be faster in project completions. The real impact is that they're doing so much more: It's total projects completed, not time per project.

Also, there's evidence that the diversity of social networks really matters, not just the number of people. People have a tendency to build social networks by talking to people like themselves. That's fine, but it doesn't increase information diversity. You need to talk to people who aren't like you. That's not always easy, but it will increase the diversity of the information you have access to. ♦

Betweenness And Reach

A person with a high degree of **betweenness** appears in the shortest communication path between many pairs of individuals. That person is in the thick of information flows and is likely to be highly productive.



Reach measures the number of people you talk to and the number they talk to. If you talk to all talk among yourselves, your reach is constrained. If you talk to people who talk to others who talk to others, your reach is unconstrained, and your information is more diverse.



Constrained vs. unconstrained

IT'S EASY TO
SEE PROBLEMS;
SOLUTIONS ARE TOUGHER.

IT MENTOR: ROBERT C. ANDERSON



25 Time-Tested Truths About IT Support

READ 'EM AND REAP BETTER PRODUCTIVITY, SERVICE AND OVERALL PERFORMANCE. BY ROBERT C. ANDERSON

WEBSTER'S DICTIONARY defines an axiom as "a self-evident truth that requires no proof." Over the course of decades in IT, I've discovered 25 axioms about the IT support environment. Being aware of these can help you design support processes that will make sense, work well and improve your team's performance.

Here are some of the great truths I've learned and how your team can apply them for better IT support:

1. The estimate a user hours is the estimate the user will remember; the date a user hours in the date the user will remember. Never give a verbal estimate or date you're not willing to live up to and die by.

2. Work without defined boundaries is work that may never end. Don't say, "I'm working on it," without qualifying when it will be done and, if necessary, why it won't be done on time.

3. The support team is most vulnerable when moving something into production.

Just the right amount of constructive paranoia is a good thing. Are you sure the right modules and versions moved into production? Check again!

4. Users have selective amnesia. Always get sign-off or written approval.

5. Nothing will be done and nothing will work unless you invest some personal time to check it. Assume that, and you will never be surprised.

IT MENTOR

6. "Not" isn't a constructive response. Never use it when a request for work or assistance is made. Instead, say, "Let me review it, and I'll get back to you by Tuesday." Then think about it; you just might be able to help.

7. What you can't measure, you can't control. Define service-level goals, and capture measurement data at its source. Compare the "should" to the "is."

8. You can't come up with an accurate estimate without knowing the number and complexity of the functions required. Decompose functional requirements, even for small requests.

9. The fix is not a good hush-hush guard. Don't quality-control your own work. Always have independent verification.

10. The test environment is not the production environment. Never assume that because it works in the former, it will work in the latter.

11. If you buy it, you own it. If you take the support call, it's your responsibility to make sure it's completed successfully.

12. Critique is positive; blame is negative. Don't blame; figure out how the group can do it better.

13. Murphy's Law is optimistic. Even the most carefully planned and executed activities will go astray at the worst possible moment. Always be vigilant, flexible and prepared.

14. Effective communication will smooth over a lot of problems or prevent potential problems from happening. Communicate potential problems or newly discovered issues to your colleagues and management team right away. Be proactive, not reactive.

15. Nobody likes surprises. Communicate changes to all who will be affected.

16. Your memory isn't trustworthy; neither is the user's. Don't trust memory; write it down.

17. Work isn't completed until you get verification from the user that it's completed. Never assume.

18. If you don't clearly define expectations, you will get what you deserve, not what you need. Be specific about what you want and when you want it, what you will deliver and when you will deliver it.

19. Users are customers, not problems. Treat them that way.

20. Perception is reality. Always get feedback on what you think you communicated. Never assume that your perception is their reality.

21. Accountability without authority leads to failure. If someone is being held accountable, give him the authority he needs to succeed.

22. It's easy to see problems; solutions are tougher. Never go to someone with a problem in one hand unless you have at least one solution in the other hand.

23. Your common sense is not always someone else's common sense. Don't assume that just because it's obvious to you, it will be obvious to others.

24. Technology doesn't always work as it's supposed to. Develop test strategies that thoroughly exercise the required operational limits of any technology on which the business depends.

25. Irretrievable data corruption usually occurs on files that are not backed up. Always back up your systems and data on a regular schedule.

If you design your IT support processes with these truths in mind and get your group to live by them, you'll improve your productivity, the quality of service delivered and overall performance. ■

ROBERT C. ANDERSON
Anderson is director of process development for Computer Aid Inc. Contact him at Bob_A._Anderson@compaid.com.

A SUPPORT PROCESS FRAMEWORK

Best-practice support processes need to be well defined, repeatable and compliant with industry standards like CMIT and ITIL. Designing and implementing them is hard work. But if you stick with it, the dividends in reduced operational costs as well as improved quality and customer satisfaction are worth the effort. It has been my experience that where designed, repeatable processes and metrics are implemented, a savings of 30% to 50% in IT support costs is likely. In order to achieve these savings, processes must formally document the answers to the following questions:

■ What type of work is being done?
■ Is there any same type of work to be done with a high degree of repeatability?

■ Who is doing the work? What are their specific roles? Who is responsible?

■ What supporting documents or other deliverables are required as part of each task?

■ How do we know that what was requested was delivered?

■ How do we define quality in work products or outcomes?

■ How do we capture data on work performed and the people who do that work?

■ How do we measure performance,

productivity, quality and customer satisfaction with all work processes, products or services?

These last questions are particularly crucial. Embedded within any good support process must be the ability to capture and report operational data that provides feedback on how the processes and resources are performing.

With questions like these as your framework and the 25 truths of IT support as guidelines, you'll avoid mistakes as you build your support processes.

- ROBERT C. ANDERSON



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Getting the NAC Of Things at RSA

When you have a problem like access control, the RSA conference is a good place to look for an answer. By Mathias Thurman

WHEN IT comes to conferences, there are two on my can't-miss list: the RSA conference and Black Hat. So I was happy to find myself last month in San Francisco (it's my favorite U.S. city) attending RSA Conference 2007.

RSA is the one place where I can bump into old colleagues, have chats with domain experts and find out what's coming from almost every major security vendor. The keynote speaker list is usually impressive — this year, it included former Secretary of State Colin Powell — and the sessions are quite informative. It seems as if each year, some items of technology stay out, and for me this time, the technology was Network Administration Contests.

NAC is of great interest to me because it can solve so many problems. A major issue for my company involves guest laptops. Whether it's a vendor providing a demo, a partner who is visiting one of our engineering groups, a consultant or a contractor, guests who plug laptops into our network pose a risk.

We could segment our conference rooms onto a separate virtual LAN, providing only limited access and no contact with the corporate LAN. But that wouldn't address what is frequently the reality: Visitors are placed in empty cubicles or congregate in labs, offices or other shared work spaces. A company like ours, with an entrepreneurial environment and an engineering-centric

mission, can't place restrictions on who works where. It would be a nightmare to enforce a written policy, and we just don't have the staff to do it or the budget to properly segment our network. Enter NAC.

If done properly, NAC would let us apply restrictions at the switch level. We could control how any device that gets attached to our network relates to the network. Guest laptops could be required to have cert in patches, antivirus software and a good desktop firewall policy before they could gain any access at all. If the laptop failed to meet those requirements, it would be placed on a "fit-up" or quarantine network until it "gets right" by having software installed or being properly configured.

NAC could also eliminate problems with rogue wireless access points. We've had unauthorized APs attached to isolated ports both here in the U.S. and at our overseas sites. During my last trip to Seoul, South Korea, I noted that several unauthorized wireless APs were attached to the company network.

The users, who were finance folks, didn't understand the se-



curity implications. They just wanted to be on the network when they were in a conference room that didn't have any network access. Ironically, that same office had an authorized wireless deployment; the finance folks didn't know about it because the service set identifier isn't broadcast and their laptops weren't configured properly.) With NAC, an unauthorized AP would be rendered useless.

Usually what happens with NAC is that the switch port won't recognize a rogue device like a wireless AP as being authorized. But some NAC approaches don't rely on this device awareness in the switch.

For example, Microsoft's approach is to issue a Dynamic Host Configuration Protocol address to compliant devices. Devices with a legitimate DHCP address get access to the corporate critical infrastructure, while others are given a DHCP address that maps to a quarantine network. Cisco's method, called Clean Access, forces all users to a single virtual LAN until they are authenticated or pass the proper security requirements.

ID, Please

Another popular technology at this year's conference was identity management. I imagine that ID management, coupled with NAC, would be nirvana to any security professional. ID management tackles the other half of the restriction puzzle: How do you manage access to a wide variety of applications?

At the heart of ID management is a directory server, where every employee is identified and granted or denied access to corporate applications. A Unix administrator, for example, would be granted

access to various Unix administrative tools and portals, but not to financial applications.

The opposite would be true for a financial analyst, and very few applications would be available to someone working in the mail room.

ID management isn't new, but sometimes I think it will meet the same fate as public key infrastructure, meaning that despite the hype, no one will spend the money to implement the technology. All the same, A1 Networks, Ping Identity and CA all had impressive stories to tell regarding their ID management tools.

I always asked after a conference which technology on display I thought was cool. This year I stopped by the booth of Mandiant, a company that years ago helped me with a security breach. It's renowned for its forensics expertise and computer security training programs, and this year it was toutng a new product that allows multiple analysts to remotely access and analyze a system.

The analysts might be scattered around the world, but they can still collaborate on analyzing your system. And you don't have to pack up the system and ship it off to the analysts, which is a real plus when you suspect that an employee might be up to something illegal on company resources. Of course, Mandiant's technology requires software to be installed on the compromised machine, but nowadays, that's a fairly trivial task. I'll definitely be spending more time evaluating this service.

But RSA and San Francisco are behind me for now. I'm back in my office, managing a huge third-party risk assessment. I'll discuss that in my next installment. ♦

SECURITY LOG

AIRMANAGE OFFERS CISCO ANALYZER

AirMagnet Inc. has released Enterprise Analyzer for Cisco, a new version of Enterprise Analyzer 3.0 that extracts data from Cisco wireless access points for analysis and reporting. The software, which includes performance optimization tools, starts at \$20,000 for three controllers and a single company license.

SAN LASSENCS IDENTITY SERVICES

San Microsystems Inc. has launched its Identity Management Professional Services. Included in the vendor's offerings are a number of services: operational support services, role management services and password management services. All of the offerings are built around San's Velocity Identity Deployment Tool.

FREE PASSWORD MANAGER DOWNSIZE

Actiontec Inc. has released a free password manager program for Windows computers. The company is also offering a version that is designed to run on a USB thumb drive and is free for personal use. Both products use Triple DES encryption and automatic logging into Web-based accounts.

KEEPYUKEYS.COM ANNOUNCES BETA

KeepYukKeys.com announced a beta program for a service that allows users to encrypt and share sensitive files. Files are uploaded from a browser using SSL encryption and stored on KeepYukKeys.com's servers using AES encryption. The service then sends the encrypted file via e-mail and "white code" to access the file. The service is free during the beta period.

WHAT DO YOU THINK?

The week's panel is written by a real security manager, Mathias Thurman, whose name and location have been disguised for obvious reasons. Contact him at mathias@thurman.com, or post the discussion in our security forum at computerworld.com/securityforum. To find a complete archive of our Security Manager's Journal, go online to computerworld.com/journal.

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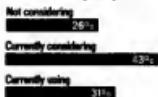
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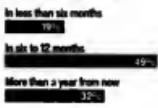
QUICK HITS

SaaS on the Rise

Are you currently using software as a service (SaaS)?



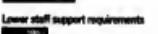
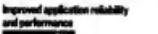
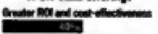
When do you think your organization will adopt SaaS?



Does/will the SaaS application replace installed application or fill an unaddressed need?



What is the greatest benefit of the SaaS offering?



SOURCE: CUTTING EDGE SURVEY OF IT BUSINESS VENDORS AND END-USER ORGANIZATIONS

Note: 25% report SaaS IT professionals as end-user organizations, reseller representatives, CIO and software vendors, independent consultants, and channel agents/partners.

ROBERT L. MITCHELL

The Liquid Data Center

LIQUID COOLING is coming to your data center. It's not a matter of whether you want it or not. A migration from air to direct liquid cooling is simply the only option that can address surging data center energy costs and allow the power densities of servers to continue to increase into the next decade. It will be too expensive not to adopt it. And it's coming sooner than you might think.

If it were up to engineers, direct liquid cooling would have been here five years ago, says 25-year IBM veteran Roger R. Schmidt, a distinguished engineer with experience designing water-cooled mainframes. He expects distributed systems to follow in the mainframe's footsteps.

Some data center managers may not fully grasp the problem because over the past eight years, server performance has increased by a factor of 75 while performance per watt of power has increased 10 times, according to Hewlett-Packard Co. But data centers aren't using fewer processors — they're using more than ever. Meanwhile, the power density of equipment has increased to the point where power and cooling systems vendor Liebert Corp. is supporting clients with state-of-the-art server racks exceeding 30 kilowatts (kW).

That creates two problems. First, energy costs are spiraling upward. Many data center managers don't see that today, because their power use isn't metered separately and isn't part of the IT budget. As costs rise, that's likely to change, forcing IT to retrofit data centers to the new reality. Second, all that energy gets converted to heat. If you want to know what the heat coming of a 30 kW rack feels like, turn your broiler oven on full blast and open the door. That's 3.4 kW. Now imagine jamming nine broker ovens, all running full tilt, into the confines of a single rack in your data center and trying to maintain the internal temperature at or below 75 degrees.

David Kelley, manager of environmental application engineering at Liebert,



ROBERT L. MITCHELL
Computerworld's executive editor,
Content Head
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says current air-cooling technologies can perhaps handle racks in the "mid-30s." But equipment vendors say that 50 kW racks could be a reality within five years.

Christian Belady, a distinguished engineer at HP, is passionate about educating data center managers about the problem and establishing standards for liquid-cooled data centers.

"If you look at the energy costs associated with not driving toward density and taking advantage of these densities, there will be huge penalties from an efficiency standpoint," Belady says.

But all that heat will have to be removed from the data center, which is one reason why data center infrastructure costs per server have risen. In fact, while the cost of server hardware has remained flat or declined slightly, Belady estimates that the cost of the data center infrastructure to support a server over a three-year life span exceeded the hardware cost back in 2003.

This year, the cost of energy (power and cooling) required per server, amortized over that same three years, has pulled even with the equipment cost. By 2008, it will surpass it, becoming the single largest component of server TCO.

That's where liquid cooling comes in. Direct cooling of servers by piping liquid refrigerant or chilled water directly to

components within racks is far more efficient than using air and will become a requirement.

How soon? Kelley says his company has projects under way with IT equipment vendors that he can't discuss. But he predicts that "within a couple of years, somebody will have something where you can plug [a loop containing liquid coolant] directly into a processor."

More efficient designs could substantially cut cooling costs, which today can account for more than half of data center energy use. Best practices and optimizations of existing infrastructure can bring immediate savings.

On racks approaching 30 kW, users are turning to spot-cooling systems that run liquid refrigerant or chilled water to a heat exchanger that blows air cool from directly above or adjacent to server racks. That's more efficient than room air-conditioning units because the chilled air travels a shorter distance. These designs pipe liquid coolant, already used by computer room air-conditioning units at the outer edges of the data center, up to the racks themselves. It's not hard to imagine extending those lines into the racks to deliver direct liquid cooling.

The heat exchanger goes away, perhaps replaced in an IBM BladeCenter chassis with a hookup that accepts a chilled water or liquid refrigerant feed.

Today, spot-cooling systems typically require ad-hoc copper piping overhead or under the floor to reach individual racks.

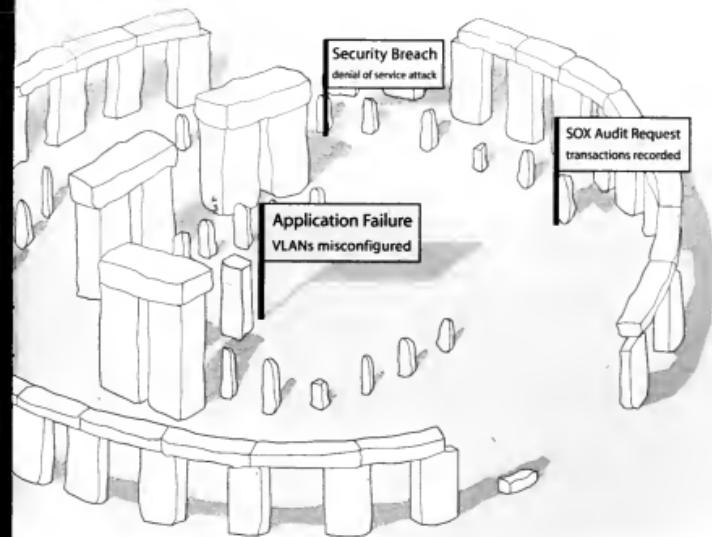
As more and more racks require such cooling, data center managers face a potential mess. What's worse, since few standards exist, things as basic as liquid coolant specifications and pipe couplings remain proprietary.

Belady is pushing for common standards. "If we wait," he says, "everything is going to be much more proprietary, and when that happens, you lose the opportunity for interoperability."

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Web 2.0

DIA meet the directives from the 9-11 Commission and other entities for intelligence agencies to "improve and deepen our collaborative work processes," he said.

The DIA launched its first wiki, dubbed Intellipedia, in 2004 on the Defense Department's Joint Worldwide Intelligence Communications System, a top-secret network that links all of the government's intelligence agencies.

"The collaboration potential of the social software side is really being thoroughly vetted and is now rapidly being adopted," Shepherd said. "Across agencies, wikis and blogs are becoming as ubiquitous as e-mail in terms of information sharing."

Although the agency's mission of providing intelligence to support military planning

and weapons acquisition is often fodder for spy novels or Hollywood blockbusters, Shepherd said the DIA's analysts are similar to workers in other industries in that "they rely upon and demand instant gratification" for their information needs.

"One of the virtues of a wiki format is that there is a blurred line between authoring and dissemination," he added. "The second something is authored, someone else can edit it and others can comment upon those edits."

The agency is also escalating its use of Asynchronous JavaScript and XML, better known as AJAX. The programming method uses JavaScript within the client to build applications that are more interactive than pages built with HTML and that don't need to refresh a Web page every time a user enters or receives new data.

Last year, the DIA began a

project to create a data access layer using a service-oriented architecture to pull together human intelligence (data gathered by people) and publicly available data gathered from the Internet and other sources into a single environment for analysis, Shepherd added.

'Top-Secret Mashups'

Analysis of data in this new environment will be done in part using Web 2.0 applications, such as "mashups," which collect data sources such as RSS feeds, Internet maps and information from the DIA network, Shepherd said. Users can access those mashups with a lightweight AJAX front end, he added.

"Web 2.0 mashup fans on the Internet would be very much at home in the burgeoning environment of top-secret mashups, which use in some cases Google Earth and in some cases other geospatial, temporal or other display



Wikis, blogs and other Web 2.0 collaboration tools are used at commonly an e-mail by analysts at the Pentagon's Defense Intelligence Agency.

characteristics and top-secret said," Shepherd said.

Although he did not provide additional details on how the agency is using mashups, Shepherd did note that the DIA is using JackBe Corp.'s AJAX tools as part of the effort to build this new type of application. JackBe has said publicly that the DIA is using its NQ Suite of AJAX tools to build a desktop-like dashboard that can display

intelligence data from a variety of sources through a standard browser.

Prabhat Agarwal, an information security industry analyst at Input, a research firm that specializes in governmental issues, said that the DIA and other defense agencies have become the most advanced users of Web 2.0 tools in the federal government because they have a more secure IT infrastructure. *

Feinstein Calls for Probe Into E-voting Machines

Senator asks GAO to look at potential for DRE malfunctions, election fraud

By MARC L. BONOMI

An influential U.S. senator has called on the federal government to find out why electronic voting machines have caused problems in some recent elections.

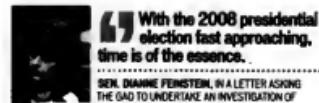
Sen. Dianne Feinstein (D-Calif.) earlier this month asked the U.S. Government Accountability Office to conduct an investigation of e-voting machines — especially those systems that fail to produce paper receipts for the ballots cast.

Feinstein, who chairs the Senate Rules and Administration Committee, called on the GAO to complete its investigation before the 2008 presidential election.

The senator also asked the GAO to investigate claims

by some e-voting critics that certain machines are prone to error, can be easily hacked and altered, and can be secretly reprogrammed to change the outcome of a race.

A GAO spokesman last week said that the agency has begun reviewing Feinstein's request and is concerned that the proposed assessment would require a very broad investigation into e-voting technologies.



With the 2008 presidential election fast approaching, time is of the essence.

SEN. DIANNE FEINSTEIN, IN A LETTER ASKING THE GAO TO UNDERTAKE AN INVESTIGATION OF E-VOTING EQUIPMENT AS SOON AS POSSIBLE

manufactured by Election Systems & Software Inc.

Feinstein has also asked the GAO to review the printers used to create paper receipts of the ballots cast on the DREs. She noted that paper jams and printer malfunctions in a 2004 election in Cuyahoga County, Ohio, caused 10% of the paper voting records to be ruined.

She urged the GAO to complete the study as soon as possible and report back to the Rules and Administration Committee. "With the 2008 presidential election fast approaching, time is of the essence," she wrote in the letter.

A spokesman for Feinstein estimated that it would take a number of months for the investigation to be completed.

He noted that Feinstein had singled out the Sarasota incident as a "clear example of what can go wrong, and she wants to find out the reasons and prevent it from happening again." *

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FRANK HAYES ■ FRANKLY SPEAKING

Hard Data

NO THEORY is ever as good as lots of real-world data. So here, based on lots of real-world data, is what you should do to minimize problems with hard disk drives: a) burn them in rigorously; b) replace them as soon as they start throwing errors, especially scan errors; and c) retire them before they turn three years old. Oh, and d) remember that none of those measures is a substitute for regular backups.

That's the gist of a pair of amazing studies presented at the FAST '07 storage conference this month. Two separate research groups each collected data on 100,000 disk drives, some of which failed — then they crunched the numbers to identify how the drives failed, what they (mainly) failed from and what they (mostly) *didn't* fail from.

And boy, do they ever fail. Hard drives are the most commonly replaced hardware item in many data centers, and they account for 10% of all hardware-related outages. Anything that tells us how to keep them from dropping dead is money in the bank for IT shops.

One of the studies, from Carnegie Mellon University, got its statistics from a wide range of sites, including the Los Alamos National Laboratory, the Pittsburgh Supercomputing Center and various Internet service providers. (You can find that study online at www.usenix.org/events/fast07/tech/schroeder.html.)

The other study sifted through data from Google's automated system for tracking performance of drives in its own huge storage farms. That one's at http://labs.google.com/papers/disk_failures.pdf.

If those two populations sound very much alike — well, listen harder. High-performance computing centers tend to buy gear with high-performance specs. Google, on the other hand, is notoriously cheap when it comes to hardware — it buys garden-variety hard drives in large lots from whoever is offering the best deal that particular week.

But it turns out that high-end and consumer drives have a lot in common. For one thing, they typically don't last the five years that drive vendors say they should, at least not in server-farm settings. Drive failures at Google take a big jump once drives get to be more than two years old. And according to the Carnegie Mellon team, those rising failure rates never level off — they just keep going up as drives get older.



PRALIE HAYES, Computerworld's senior news columnist, has covered IT for more than 20 years. Contact her at phayes@computerworld.com.

Yes, You Can Be Too Careful

Office space is being remodeled, so all the PCs are being put into storage. One user, very sensitive about his PC and new monitor, came to us and insisted that "someone's PC is going to be stored on the bottom and someone's on top, and I want mine to be on top," reports a pilot fish there. "When we packed up the PCs, he had wrapped his PC and monitor all up in tape so it was one large package, and we dutifully placed it on top of all the others." And when the two dozen PCs were reassembled three days later? "Everyone's PC was fine except our very particular user," fish says. "His prized monitor had come through with a cracked screen — the only incident in the move."

No Net?

Trouble ticket says a workstation is getting no signal and can't connect to the network. Network support pilot fish checks the net plane, and there's a wireless access point less than 20 feet away, so that can't be the problem.

"Arriving in



guide out it. :-)"

Not long after,

connected IT guy shows up

at fish's desk.

"I heard you put a request for a flat-panel monitor," IT guy says. "Did you really try buying your big monitor sideways? We were concerned that it may have caused problems."

Aha!

Office manager asks pilot fish for help putting up a workstation that's having trouble off for servicing. "Will you come take this cable?" asks manager. "I can't get it loose." Turns out it's an old CRT monitor with a video cable that's hardened. I can't remove it either, without pliers, fish says. Why are you trying to take the cable off the back of the monitor, anyway? "So I can take the computer to the service center where they can replace the hard drive." Uh, says fish, why don't we just unplug it from the PC? "Duhhh... ."

Beware the Shaws

User pilot fish sends a request to IT: "Would it be possible to get a flat-panel monitor? I have one and turned worse?" This fax software is killing my old eyes. I tried turning my monitor sideways, but it didn't

work. Now we've got hard data to work from, lots of it. We know much more about how drives die, and how they don't. And now we can do something about it.

Burn 'em in. Watch for errors. Don't let 'em grow old. And test those backups, OK? *



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